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ABSTRACT

This report addresses some questions about the role of college faculty in distance education in the fall term of 1998 using data from the 1999 National Study of Postsecondary Faculty (NSOPF:99) for 960 institutions and 28,704 faculty members. In NSOPF:99, instructional faculty and staff at two- and four-year institutions were asked questions about a wide range of issues. The analysis in this report focuses on whether instructional faculty and staff indicated that they taught at least one distance education class. The NSOPF:99 faculty questionnaire lacked detailed questions about modes of technology, training, and instructional practices in individual distance education courses, but the data do permit descriptions of national patterns of faculty involvement in distance education, and they describe the relationship of participation in distance education to other aspects of faculty work. Across the United States, about 6% of instructional faculty and staff who reported teaching for-credit classes indicated that they taught at least one distance education class, and about 9% reported teaching at least one class in a non-face-to-face mode. Overall, the teaching load appears somewhat higher for instructional faculty and staff teaching distance classes than for those not doing so. However, relatively few differences for most variables were found between faculty teaching distance classes and their colleagues not doing so. Appendixes contain a glossary, technical notes, and supplemental tables. (Contains 38 tables, 12 figures, and 30 references.) (SLD)

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Statistical Analysis Report **February 2002**

Postsecondary Education Descriptive Analysis Reports

Distance Education Instruction by Postsecondary Faculty and Staff: Fall 1998

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Statistical Analysis Report February 2002

Postsecondary Education Descriptive Analysis Reports

Distance Education Instruction by Postsecondary Faculty and Staff: Fall 1998

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Executive Summary

Distance education availability, course offerings, and enrollments increased rapidly during the 1990s (Lewis et al. 1999). The proliferation of distance education offerings at the nation's degree-granting institutions has sparked considerable public debate, with vocal proponents (Turoff 1999) and detractors (Young 2000). However, the extent to which instructional faculty and staff are involved in distance education has not been extensively explored (Phipps and Merisotis 1999).

This report begins to address some of the questions about the role of faculty in distance education in fall 1998 using the 1999 National Study of Postsecondary Faculty (NSOPF:99). In NSOPF:99, instructional faculty and staff at 2- and 4-year degree-granting institutions were asked questions about a wide range of issues.

The analysis in this report focuses on whether instructional faculty and staff—that is, respondents who reported teaching one or more classes for credit whether or not they were considered by the institution to have faculty status[1]—indicated teaching at least one distance class. This report uses two items from the NSOPF:99 faculty questionnaire to determine whether respondents taught any distance classes. First, for each of up to five for-credit classes, respondents were asked to indicate whether the class was taught "through a distance education program."[2] In this report, respondents answering "yes" for any of their classes are described as having taught at least one "distance education class." Second, for each of the same for-credit classes, respondents were asked to indicate the primary medium used to teach the class: face-to-face, computer, TV-based, or other. Respondents indicating that any of their classes were taught using any primary medium other than face-to-face communication are described as having taught at least one "non–face-to-face class." Each of these two variables provides a measure of participation in distance education. When results apply to both measures, the term "distance class" is used.

Although the NSOPF:99 faculty questionnaire lacked detailed questions about modes of technology, training, and instructional practices in individual distance education courses, the data permit description of national patterns of faculty involvement in distance education. The findings also describe the relationship of participation in distance education to other aspects of faculty work, such as workload and student interaction. The results presented here also serve as a baseline for studies of trends in faculty participation in distance education using future data collections. The report first presents the proportion of faculty who taught distance classes and the relationship of faculty and institutional characteristics to teaching distance classes. Then, instructional faculty and staff who taught distance classes are compared with those who did not in terms of workload and compensation, interactions with students, classroom and student practices, and job satisfaction. Most of the analyses for this report were conducted separately for full- and part-time respondents.

[1]For brevity, the term "faculty" is often used in this report, although it includes staff teaching for-credit classes who do not have faculty status.

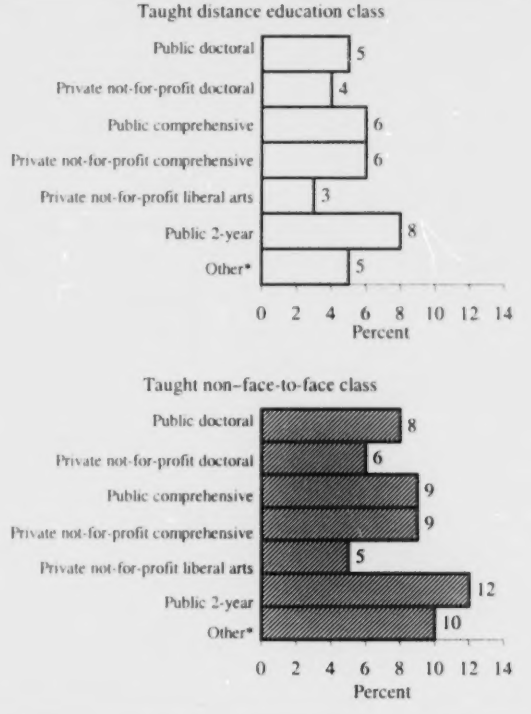
[2]The term "distance education program" was not defined for respondents.

Instructional Faculty and Staff Teaching For-Credit Distance Classes

Across the nation, about 6 percent of instructional faculty and staff who reported teaching one or more for-credit classes indicated that they taught at least one distance education class in fall 1998. Nine percent reported teaching at least one class primarily in a non–face-to-face mode—using a computer, TV-based, or other non–face-to-face medium. Those who taught distance education classes were considerably more likely than those who did not teach distance education classes to have also indicated that they taught non–face-to-face classes. Nevertheless, among those who did not teach distance education classes, about 6 percent indicated that they taught at least one class using a primarily non–face-to-face medium. Of those who did teach distance education classes, about one-third (36 percent) indicated that they taught only classes that used primarily face-to-face instruction (that is, identified their distance education classes as using primarily face-to-face instruction). This could occur when most of the students in a given class meet in a traditional classroom, but some students elect to take the same class via distance education.

Few demographic characteristics (e.g., gender, race/ethnicity), conditions of employment (e.g., full- or part-time status, academic rank, tenure status), or aspects of education and experience (e.g., highest degree attained, years in current job) were associated with either dimension of participation in distance education. Only institution type was associated both with teaching distance education classes and with teaching non–face-to-face classes: faculty at public 2-year institutions were more likely than those at private doctoral or liberal arts institutions to teach either type of distance class (figure A). For example, faculty at public 2-year institutions were more likely than their counterparts at private doctoral institutions to teach at least one non–face-to-face class (12 versus 6 percent).

Figure A.—Percentage of instructional faculty and staff at degree-granting institutions who taught distance classes, by institutional type: Fall 1998



*Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. Non–face-to-face classes are those taught with a computer, TV-based, or other non–face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

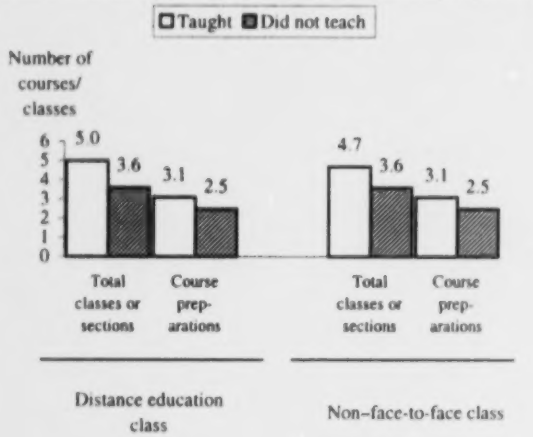
Workload and Compensation

Is distance education offered *in addition* to regular course offerings, or does it replace other

classes? Faculty interest groups have suggested that faculty workload may increase as distance education proliferates. In particular, some have concluded that distance education offerings require a disproportionate investment of time and effort on the part of faculty members, even when compared with classroom courses of comparable size, content, and credit (American Association of University Professors 1999; American Council on Education 2000; University of Illinois Teaching at a Distance Seminar 1999). While these data cannot address student-faculty ratios at the departmental or institutional level, and cannot examine causal relationships, several measures of the teaching load at the faculty level are available to provide a snapshot of the activities of those faculty who do and do not teach distance classes.

Overall, the teaching load was somewhat higher for instructional faculty and staff teaching distance classes than for those not doing so. On average, full-time faculty reporting participation in distance education taught at least one class or section more in fall 1998 than those not teaching either distance education classes or non–face-to-face classes (figure B). The difference appeared to be due to their teaching more for-credit classes or sections, rather than more noncredit classes or sections. Faculty teaching distance classes also averaged about 3.1 unique course preparations, compared with about 2.5 preparations for their colleagues not teaching distance classes. These relationships were also found for part-time faculty and when controlling for other characteristics such as institution type, teaching discipline, and level of classroom instruction. However, the average class size for faculty who taught distance classes was comparable to the average class size for those faculty who did not, and the percentage of total work time spent on teaching activities was also similar for faculty who taught distance classes (62 percent) and those who did not (60 percent).

Figure B.—Average teaching load of full-time instructional faculty and staff at degree-granting institutions, by participation in distance classes: Fall 1998



NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. Non–face-to-face classes are those taught with a computer, TV-based, or other non–face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Incorporating distance education into faculty schedules as part of regular teaching loads, as overloads, or on a class-by-class basis has implications for the compensation faculty receive for their work (Lynch and Corry 1998). Despite the difference in workload, the basic salary instructional faculty and staff received from their institution for calendar year 1998 was similar regardless of participation in distance education. This analysis also looked at additional income faculty received from the institution, such as money received for summer sessions, overloads, or coaching, for that year. Full-time faculty who taught classes offered through distance education programs earned about $1,700 more in additional institutional income (beyond their basic salary) than those who did not teach such classes; how-

ever, compensation for those who taught non–face-to-face classes was comparable to compensation for their colleagues who taught only face-to-face classes. Part-time faculty who taught either type of distance class were similar in the additional income they received.

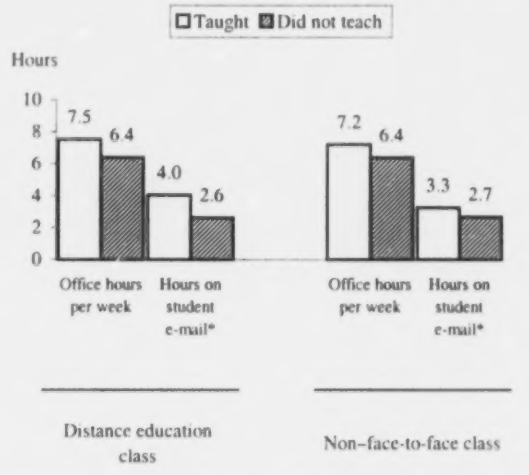
Student-Faculty Interaction

Both proponents and critics of distance education stress that personal interaction is crucial to the learning process, but disagree over whether the kind of interaction the distance education student experiences is of comparable educational value to that experienced by the on-campus student (Gladieux and Swail 1999; Sherron and Boettcher 1997). NSOPF:99 included a few indicators of faculty availability to or interaction with students, including both traditional means (office hours and student contact hours) and a more novel one (e-mail communication).

Based on the evidence available for these types of contact, those faculty who participated in distance education appeared to interact with students, or be available to them, more than their nondistance counterparts in fall 1998. Full-time faculty teaching distance classes held slightly more office hours per week than their peers who did not teach distance education classes or non–face-to-face classes (figure C).

And because they taught more for-credit classes, while average class size was comparable, faculty teaching distance classes had more student contact hours per week than those not teaching such classes. Furthermore, full-time faculty who taught distance classes were more likely than other faculty to communicate with their students via e-mail.

Figure C.—Average office hours and hours spent on student e-mail per week for full-time instructional faculty and staff at degree-granting institutions, by participation in distance classes: Fall 1998



*For those who said they communicated with students via e-mail.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. Non–face-to-face classes are those taught with a computer, TV-based, or other non–face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Among those exchanging e-mail with students, distance education faculty reported exchanging e-mail with a higher percentage of their students, and spending more time each week in this activity, than their nondistance colleagues. For example, full-time instructional faculty and staff who taught any distance education classes spent about an hour and a half more each week responding to student e-mail than their counterparts teaching only traditional classes. Many of these differences were found for part-time faculty as well.

Other Findings

There is some evidence that faculty teaching distance classes are more "wired" than their counterparts not teaching such classes. Internet access and the quality of institutional computing resources were associated with whether faculty taught any non–face-to-face classes. As described above, those faculty who taught distance classes exchanged more e-mail with their students. They were also more likely to use class-specific Web sites. These results are consistent with the expansion of modes of distance education that take advantage of recent developments in advanced telecommunications (Phipps and Merisotis 2000; Turoff 1999; University of Illinois Teaching at a Distance Seminar 1999).

Relatively few differences were found between faculty teaching distance classes and their colleagues not doing so in terms of other factors explored in this study. For example, there were few differences in the use of various assessment practices, and in job satisfaction and opinions about the institutional climate in which faculty members worked. In fact, despite carrying larger teaching loads, faculty who taught any distance classes were just as likely, and in some cases *more* likely, to indicate that they were very satisfied with their workload, compared with faculty teaching only traditional classes.

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Foreword

This report describes faculty participation in distance education in fall 1998. It examines the proportion of faculty and instructional staff who taught distance classes and factors associated with the likelihood of doing so. It also compares faculty who taught distance classes with those who did not in terms of workload and compensation, interaction with students, classroom practices, and job satisfaction.

This report uses data from the 1999 National Study of Postsecondary Faculty (NSOPF:99). NSOPF:99 is the third cycle of data collections on postsecondary faculty conducted by the National Center for Education Statistics (NCES). Previous collections were conducted for 1987–88 and 1992–93.

The estimates presented in the report were produced using the NCES Data Analysis System (DAS), a microcomputer application that allows users to specify and generate tables, for the NSOPF:99 study. The DAS produces the design-adjusted standard errors necessary for testing the statistical significance of differences in the estimates. For more information on the DAS, readers should consult appendix B of this report.

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The author is grateful to staff members at MPR Associates, NCES and other U.S. Department of Education offices, and nongovernmental agencies for their contributions to the production of this report. At MPR Associates, valuable research assistance was provided by Kathryn Rooney. Laura Horn provided knowledgeable oversight throughout the process and made many helpful comments and suggestions on earlier drafts. Members of the production team—Francesca Tussing, Andrea Livingston, Wes Nations, and Barbara Kridl—provided extensive and invaluable work in the production of the report.

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Introduction

Many postsecondary education resources are being devoted to nontraditional delivery methods such as distance education. At many colleges and universities, the lines between distant and some on-campus instruction are blurring into what is termed "distributed learning" (Oblinger, Barone, and Hawkins 2001). In 1997–98, 44 percent of Title IV degree-granting institutions[1] offered distance education courses, an increase of 11 percentage points from fall 1995 (Lewis et al. 1999). Growth occurred for both public and private 4-year institutions as well as public 2-year institutions. Furthermore, the number of course offerings and enrollments in those courses approximately doubled in 3 years, from the 1994–95 to 1997–98 academic years, and the number of distance education degree and certificate programs rose from 860 in fall 1995 to 1,520 in 1997–98 (Lewis et al. 1999).

This proliferation of distance education offerings at the nation's degree-granting institutions over 2 to 3 academic years has sparked considerable public debate, with vocal proponents (Turoff 1999) and detractors (Young 2000). Although theories about the impact of technology on instruction abound (Eamon 1999), the claims and concerns of the parties are sometimes not well informed by empirical evidence. For example, a major point of contention is whether distance education methods are as "effective" as traditional ones: while many studies appear to show that distance education is as effective as face-to-face instruction in terms of student grades, test scores, and attitudes, shortcomings of the existing research undermine the conclusiveness the studies may claim (Phipps and Merisotis 1999).

In addition, the extent to which instructional faculty and staff participate in distance education has not been extensively explored, even in the distance education literature. In a review of the major subjects addressed in a range of distance education publications in the last decade, Phipps and Merisotis (1999) found that faculty issues, along with library services, received the sparsest coverage.

This report addresses some questions about the role of postsecondary faculty and staff in distance education using the 1999 National Study of Postsecondary Faculty (NSOPF:99), a nationally representative sample of all instructional faculty and staff at postsecondary degree-

[1]Hereafter, both "degree-granting institutions" and "institutions" are used to refer to degree-granting institutions with Title IV participation agreements with the U.S. Department of Education.

granting institutions in fall 1998. Because the field continues to grow and change rapidly (Oblinger, Barone, and Hawkins 2001), the fall 1998 data serve as a useful baseline for future studies. In this study, instructional faculty and staff at 2- and 4-year degree-granting institutions were asked about a wide range of issues. While detailed questions about modes of technology, training, and instructional practices in individual distance education courses were absent, the data do permit description of national patterns of faculty involvement in distance education that are grounded in representative empirical information on the topic. The relationship of faculty participation in distance education to other faculty issues can also be explored.

This report investigates the following questions about the faculty and staff who taught distance classes in postsecondary institutions:

- Who was likely to teach for-credit distance classes?
- How did those who taught distance classes differ from those who did not in the following areas:
  - Workload and compensation?
  - Interactions with students?
  - Classroom and student practices?
  - Job satisfaction and opinions about the institution?

Background

Who teaches distance education? Instructors in some academic fields seem to be more likely to teach these classes than those in other disciplines (American Council on Education 2000), but information about other faculty characteristics is largely unavailable. Previously, clues to understanding which faculty members are most likely to teach distance education have come primarily from speculation about administrative motivation for expanding distance education or projections of possible directions that such offerings could take (Eamon 1999). Lynch and Corry (1998), for example, suggest that new technologies for course delivery will enable even small or remote institutions to hire nationally recognized experts to teach courses from a distance, resulting in increased competition for "the best and the brightest" faculty. Others have expressed concern that administrators and legislators who wish to weaken tenure may propose policies that substitute advanced technology for the services of their own experienced faculty and employ part-time, non–tenure-track instructors to manage online courses (Monaghan 1996). Both perspectives suggest that faculty with less attachment to an institution—including part-time or temporary faculty, those not on a tenure track, or those who have not been affiliated with the institution for long—might be more likely to teach distance classes. On the other hand, having

the security of tenure might encourage experienced faculty to try more controversial forms of instructional design such as distance education.

As media attention has questioned the extent of faculty involvement in traditional undergraduate teaching (Chen 2000), it is useful to assess the potential additional demands on the time of instructional faculty and staff. Is distance education offered *in addition* to regular course offerings, or does it replace other classes? The American Council on Education (2000) identified workload credit as among the key faculty concerns to be addressed in institutional distance education policymaking. These concerns included such questions as whether teaching load credit is given for distance education course development; how such activities affect promotion and tenure; and how they influence class size. Several groups have concluded that distance education offerings require a disproportionate investment of time and effort on the part of faculty members, even when compared with classroom courses of comparable size, content, and credit (American Association of University Professors 1999; Carnevale 2001; Schneider 2000; University of Illinois Teaching at a Distance Seminar 1999). For example, a National Education Association (NEA) survey of its higher education membership found that while a majority of respondents expressed positive opinions about distance education, distance education instructors indicated that the amount of time needed to prepare and teach distance education courses was considerably greater (Carr 2000b; National Education Association 2000). They felt that enrollment limits were important to maintain the quality of instruction that they delivered (National Education Association 2001).

Furthermore, whether a distance education offering is considered part of a faculty member's regular teaching load, an overload, or as a special work-for-hire arrangement raises questions of appropriate compensation for the work (Lynch and Corry 1998). NEA members who taught distance courses expressed concern that divisiveness could result among faculty if distance educators were viewed as receiving special treatment (National Education Association 2001). Although aggregated trends show faculty pay as a proportion of overall budgets decreasing while the number of adjunct faculty teaching distance education increases (Carr 2000a), this pattern does not illuminate how distance education instruction is related to compensation at the instructor level. Media reports indicate that many faculty members believe that administrators perceive distance education as less expensive, accomplished through the use of adjunct or part-time instructors and prepackaged courses obtained from for-profit companies (American Federation of Teachers 2000; Carnevale 2000b, 2000c). But close faculty involvement in developing course content is considered key to maintaining quality in distance education by outside evaluators, accrediting bodies, and faculty organizations (American Association of University Professors 1999; Carnevale 2000a; Phipps and Merisotis 2000). Practitioners maintain that quality distance educa-

tion is actually more costly than traditional face-to-face instruction (American Council on Education 2000; Carnevale 2001; University of Illinois Teaching at a Distance Seminar 1999).

Pedagogy is also considered a key component of quality in the distance education literature (Phipps and Merisotis 2000). The diversity of media used for distance education precludes generalizations about instructional practices, and critics and proponents alike point out that the hallmarks of quality education are, or should be, comparable regardless of the medium (Schneider 2000; Turoff 1999; University of Illinois Teaching at a Distance Seminar 1999). Yet some themes recur in the discussion of quality and pedagogy in distance education, particularly faculty-student and student-student interaction (Gladieux and Swail 1999). For example, San Diego State University passed a detailed policy that requires distance education courses to include "substantial, personal, and timely" student interaction with both the instructor and other students in the course (Carnevale 2000b). While developing the policy, the University devoted considerable attention to whether the term "interaction" should include asynchronous communication (such as e-mail or "electronic bulletin board" exchanges). In the interest of greater flexibility, the committee formulating the policy ultimately chose to leave the term undefined.

Many critics believe that distance education, while useful for those who could not otherwise further their education, is not a substitute for students' experiences on campus. They maintain that spontaneous interaction with professors, visiting speakers, and other students, which presents opportunities for thinking about concepts in unanticipated ways, is fundamental to post-secondary education (Black 1992; Guernsey 1998; Sherron and Boettcher 1997). Distance education is also thought to handicap students by limiting their library resources (American Association of University Professors 1999).

Yet the development of advanced telecommunications technology permits more variations in class design than the televised courses or prerecorded videos representative of the previous generation of distance education. For example, one professor creating a distance education course found that the course could allow online students to break into small group conferences that the professor could rotate among, replicating the small group discussion format he favored in his face-to-face classes (Carnevale 2000d). In fact, the newest modes of distance education make possible forms of interaction that may have benefits *not* available in face-to-face instruction (Sherron and Boettcher 1997; Turoff 1999). For instance, asynchronous online conferencing may increase class participation by giving students who would be reluctant to contribute to a face-to-face discussion more time to think about the issues raised by other students and formulate their comments in response. Also, keeping transcripts of online course sessions allows students with limited English proficiency the opportunity to read the actual words of the instructor and other students several times to cement their understanding of the material (Turoff 1999). Distance edu-

cation instructors are very positive about the promise of the media, particularly because they view it as increasing accessibility for a wider range of students, which they strongly favor (National Education Association 2000, 2001).

In short, proponents and critics agree that interaction is important to the learning process. They tend to differ, however, about whether the kind of interaction the distance education student experiences is of comparable educational value to that experienced by the on-campus student.

The 1999 National Study of Postsecondary Faculty (NSOPF:99)[2] provides relevant data to inform these and other questions on a national scale. The analysis for this report first examines the percentage of postsecondary instructional faculty and staff who taught for-credit distance education classes, and the number of such classes they taught. It then compares the proportion of faculty members teaching distance classes across demographic characteristics, types of appointment, level of experience, and institution type. The subsequent section compares the workload and compensation of faculty who taught distance education with those of faculty who did not. While NSOPF:99 does not allow an investigation of faculty-student interaction in specific types of courses, it does permit a general exploration of the extent to which students have contact with distance education faculty. The analysis also considers faculty use of other teaching practices, including the use of various assessment strategies and class-specific Web sites, making comparisons between instructional faculty and staff who taught distance education and those who did not. Finally, faculty members' perceptions of their institutional environment are investigated in relation to their participation in distance education.

Data and Measurement Issues

This report uses NSOPF:99 to explore the involvement of instructional faculty and staff in distance education classes. NSOPF:99 contains a nationally representative sample of all instructional faculty and staff at postsecondary institutions that granted 2-year or 4-year degrees in fall 1998.[3] The analysis includes respondents who were on the faculty or who had some instructional duties even if they were not considered to have faculty status by the institution, and is limited to those who reported teaching one or more classes for credit. This sample is referred to as "instructional faculty and staff."[4]

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[2]NSOPF:99 was conducted in 1999 and asked faculty and instructional staff about their activities in fall 1998.

[3]Postsecondary institutions that offer only less-than-2-year programs or only certificate programs are excluded from the sample. Private for-profit institutions are also excluded. Hence, for brevity, "private" is used here to refer only to private not-for-profit institutions. See appendix B for details about the institution sample.

[4]For brevity, the term "faculty" is used in this report to refer to both faculty and instructional staff (those with instructional duties but not considered by the institution to have faculty status). Of the estimated 1,074,000 faculty and instructional staff represented in NSOPF:99 overall, 82 percent or 882,000 reported teaching one or more classes for credit and are included in this report.

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The analysis focuses on whether faculty indicated teaching at least one distance class. This report uses two items from the NSOPF:99 faculty questionnaire to determine whether respondents taught any distance classes. First, for each of up to five for-credit classes, respondents were asked whether the class was taught "through a distance education program." In this report, respondents answering "yes" for any of their classes are described as having taught at least one "distance education class." Second, for each of the same for-credit classes, respondents were asked to indicate the primary medium used to teach the class: face-to-face, computer, TV-based, or other. Respondents indicating that any of their classes were taught using any primary medium other than face-to-face communication are described as having taught at least one "non–face-to-face class." When results apply to both measures, the term "distance classes" is used. Together, the two variables provide slightly different perspectives on distance education. For example, non–face-to-face classes might include distance education classes that are not offered in a degree program obtainable entirely through distance education. On the other hand, classes taught primarily via face-to-face communication might be taught predominantly in a classroom to on-campus students but also be available as distance education classes using another medium of instruction. Additional details about these and other variables used in the report are available in appendix A.

Organization of the Report

The first section of findings, "Who Teaches Distance Education?", explores how various characteristics of faculty and the institutions in which they teach are related to teaching distance education classes and to teaching non–face-to-face classes, including separate estimates for computer-based, TV-based, and other non–face-to-face classes. This section shows whether some types of faculty members are more likely than others to teach distance classes, focusing on various faculty demographic characteristics, types of appointment, education, and experience. In addition, since many of the newest technologies for teaching at a distance are computer-based, the relationship of computer resources to participation in distance education is also considered. Finally, this section assesses whether involvement in distance education varied by the type and size of the institution and explores the relationship between teaching any distance education classes and teaching any non–face-to-face classes.

The remainder of the results describe how teaching distance classes is associated with various other aspects of the job. It compares those who taught any distance education classes with those who did not, and those who taught any non–face-to-face classes with those who did not, with respect to such features as workload, classroom practices, and job satisfaction. Estimates are also provided separately for those teaching any computer-based, TV-based, or other non–face-to-

face classes. Because these groups are small, however, and the standard errors for their estimates are large, even apparently large differences among these groups were often not statistically significant; thus, they are not discussed.

Finally, the analysis is restricted to the 91 percent of respondents with at least some instructional duties. Because information about distance education classes and the primary medium used was collected on only for-credit classes, the analysis is further restricted to those respondents teaching one or more classes for credit. In addition, because full- and part-time faculty differ widely on most characteristics, analyses in all but the first section are conducted separately for full- and part-time faculty.

Results

Who Teaches Distance Education?

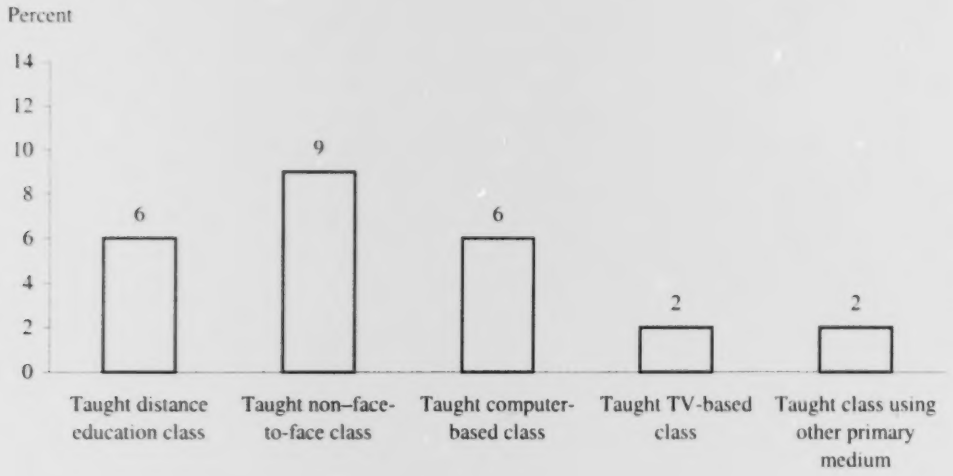
As discussed earlier, some have speculated that faculty with less attachment to a given institution may be more likely to teach using distance methods if institutions include distance education in their curricula primarily by hiring on a course-by-course basis (Lynch and Corry 1998; Monaghan 1996). However, data determining which faculty members are most likely to teach distance classes are relatively sparse. This study examined faculty participation in distance education for a wide variety of faculty demographic characteristics, types of appointment, education and experience, computer resources, and institutional characteristics.

Distance Education Classes

Figure 1 shows the percentage of instructional faculty and staff who reported teaching various types of distance classes. This section focuses on those faculty who taught one or more classes offered through a distance education program, called "distance education classes." Overall, about 6 percent of instructional faculty and staff with some for-credit instructional duties indicated that they taught at least one distance education class. Those who did teach distance education classes averaged about 1.5 such classes, about one-half (52 percent) of the for-credit classes they taught overall (table 1).

Demographic characteristics of faculty such as gender, race/ethnicity, and age are often associated with the responsibilities and tasks performed in their jobs (Nettles, Perna, and Bradburn 2000). However, these characteristics were not associated with the likelihood of teaching a distance education class (table 1). Among faculty who did teach distance education classes, Asian/Pacific Islander and Hispanic faculty taught slightly fewer such classes than White faculty. However, other demographic characteristics were unrelated to the number of distance education classes taught.

Figure 1.—Percentage of instructional faculty and staff at degree-granting institutions who taught various types of distance classes: Fall 1998



NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. Non–face-to-face classes are those taught with a computer, TV-based, or other non–face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

As described above, some observers have suggested that instructors for distance education courses are being recruited from outside the regular faculty of the institution, such as part-time or temporary instructors (Monaghan 1996). However, various aspects of faculty appointments were unrelated to teaching a distance education class (table 2). Faculty status, employment intensity,[5] academic rank, and regular or temporary appointment were not associated with teaching a distance education class. Tenure status was also generally unrelated to teaching distance education classes.

[5]Employment intensity of part-time or full-time refers to status as recognized by the institution, not to the amount of instruction conducted.

Table 1.—Among instructional faculty and staff at degree-granting institutions, percentage teaching distance education classes for credit, and number and percentage of such classes taught, by demographic characteristics: Fall 1998

Characteristic	Percent teaching distance education class	Of those teaching a distance education class:	
		Number of distance education classes	Percent of for-credit classes taught through distance education program
Total	5.9	1.5	52.4
Race/ethnicity			
White, non-Hispanic	5.9	1.5	53.5
Black, non-Hispanic	4.0	1.7	49.0
Asian/Pacific Islander	8.0	1.1	40.2
Hispanic	5.0	1.2	45.2
American Indian/Alaskan Native	11.0	(#)	(#)
More than one race/ethnicity	6.5	(#)	(#)
Gender			
Male	5.2	1.6	51.5
Female	6.8	1.5	53.2
Age			
Under 35	5.0	1.5	57.9
35–44	5.5	1.5	49.5
45–54	6.6	1.5	51.7
55–64	5.7	1.6	49.6
65 or older	5.4	1.6	69.0

#Too small to report.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Based on reports of whether up to five for-credit classes were identified as being taught through a distance education program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Among those who taught distance education classes, part-time faculty, those with temporary appointments, and those without faculty status taught a higher proportion of their classes through distance education programs than full-time staff, regular appointees, and respondents with faculty status, respectively. For example, among those who taught at least one distance education class, about 68 percent of classes taught by part-time faculty were taught through distance education programs, compared with an average of 41 percent of the classes of full-time faculty.

Table 2.—Among instructional faculty and staff at degree-granting institutions, percentage teaching distance education classes for credit, and number and percentage of such classes taught, by employment and teaching characteristics: Fall 1998

Characteristic	Percent teaching distance education class	Of those teaching a distance education class:	
		Number of distance education classes	Percent of for-credit classes taught through distance education program
Total	5.9	1.5	52.4
Faculty status			
Yes	6.0	1.5	50.9
No	4.7	1.8	71.4
Employment status			
Full-time	6.0	1.5	40.9
Part-time	5.7	1.6	68.0
Academic rank			
Full professor	6.3	1.5	50.2
Associate professor	5.0	1.4	45.4
Assistant professor	6.2	1.5	44.3
Instructor	6.1	1.6	59.3
Lecturer	4.3	(#)	(#)
Other	5.4	1.4	60.0
No rank	8.6	1.6	61.7
Tenure status			
Tenured	6.1	1.5	43.3
Tenure-track	4.3	1.4	42.2
Non–tenure-track	5.7	1.5	59.9
No tenure system	7.3	1.6	57.0
Type of appointment			
Regular	5.8	1.4	46.9
Temporary	5.9	1.6	63.3
Teaching discipline			
Business	8.7	1.5	46.1
Education	6.9	1.6	61.6
Engineering/computer science	5.4	1.7	52.3
Fine arts	3.3	1.5	42.1
Health sciences	7.5	1.7	59.2
Human services	7.1	1.7	45.0
Humanities	4.7	1.6	55.2
Life sciences	3.2	1.5	54.0
Natural/physical sciences and math	4.9	1.2	62.6
Social sciences	6.0	1.4	46.9
Vocational	9.1	(#)	(#)

See footnotes at end of table.

Table 2.—Among instructional faculty and staff at degree-granting institutions, percentage teaching distance education classes for credit, and number and percentage of such classes taught, by employment and teaching characteristics: Fall 1998—Continued

Characteristic	Percent teaching distance education class	Of those teaching a distance education class:	
		Number of distance education classes	Percent of for-credit classes taught through distance education program
Level of classroom instruction*			
Undergraduate only	5.5	1.5	50.3
Both undergraduate and graduate	9.1	1.6	48.8
Graduate only	5.4	1.4	67.1

#Too small to report.

*Based on reports of the primary level of students in up to five for-credit classes.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Based on reports of whether up to five for-credit classes were identified as being taught through a distance education program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Furthermore, distance education faculty who were not on a tenure track or who worked at institutions with no tenure system taught higher proportions of their classes through distance education programs than those with tenure or on a tenure track. The number of distance education classes taught was not related to these characteristics, however.

Previous studies have suggested that faculty in some disciplines such as engineering and business have been more involved in distance education (American Council on Education 2000). Among institutions that offered distance education courses in the 1997–98 academic year, 70 percent offered college-level, credit-granting distance education courses in English, humanities, or the social and behavioral sciences, and 55 percent offered such courses in business and management (Lewis et al. 1999). Although the proportion of faculty teaching distance education classes appears to vary by academic discipline, many estimates were based on small groups with large standard errors, and no academic discipline differed significantly from the overall proportion of faculty teaching distance education classes. Academic discipline was also not associated with the number or proportion of distance education classes taught.

An institution-level survey conducted in 1997–98 found that 29 percent of 2-year and 4-year postsecondary institutions offered college-level, credit-granting distance education courses at the undergraduate level, while 12 percent offered these courses at the graduate level (Lewis et

al. 1999). Instructional faculty and staff who taught both undergraduate and graduate students were somewhat more likely to teach a class offered through a distance education program than were those who taught only one level (although this does not mean that the distance education classes themselves were offered at both levels). Among those who did teach distance education classes, level of instruction was not associated with the number of such classes taught. However, those who taught only graduate students taught a higher proportion of their classes through distance education programs than those who taught undergraduates, either alone or in combination with graduate-level instruction.

Today's traditionally aged students are typically proficient with computer technologies; personal computers and the Internet are integral to their experience rather than novel tools (Oblinger, Barone, and Hawkins 2001). Similarly, less experienced faculty may be more adept with these technologies as well and therefore more likely to incorporate them into their instruction. On the other hand, distance education may be viewed as a riskier venture undertaken primarily by more established faculty, with less experienced faculty expected to adhere to traditional modes of instruction. Perhaps reflecting such countervailing influences, education and experience were generally unrelated to the likelihood of teaching distance education classes (table 3). Education and experience were also not related to the number or proportion of distance education classes taught.

Computer networks are critical components of third- and fourth-generation distributed learning technologies (Sherron and Boettcher 1997; Oblinger, Barone, and Hawkins 2001). As a result, access to high quality computer resources might be associated with participation in distance education. However, neither access to the Internet nor faculty ratings of institutional computing resources were associated with teaching a distance education class (table 4). Among those teaching such classes, Internet access and the quality of computing resources were also not related to the number of such classes taught. Among those teaching distance education classes, the proportion of such classes taught was associated with Internet access. However, those who had Internet access at work actually taught a *smaller* proportion of their classes through distance education programs than those without such access.[6] Faculty ratings of computing resources were not associated with the proportion of classes taught through a distance education program.

There were some differences by institution type in faculty participation in distance education. Instructional faculty and staff who worked at public 2-year institutions were more likely than those at private not-for-profit doctoral or liberal arts institutions to teach any classes offered

[6]The proportion of faculty without Internet access at work is a minority: 12 percent had Internet access only at home, and 7 percent had no Internet access at all. U.S. Department of Education, National Center for Education Statistics, 1999 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table 3.—Among instructional faculty and staff at degree-granting institutions, percentage teaching distance education classes for credit, and number and percentage of such classes taught, by education and experience: Fall 1998

Characteristic	Percent teaching distance education class	Of those teaching a distance education class:	
		Number of distance education classes	Percent of for-credit classes taught through distance education program
Total	5.9	1.5	52.4
Highest degree			
Doctor's	4.8	1.5	50.2
First-professional	7.1	1.7	50.3
Master's	7.0	1.5	53.4
Bachelor's	4.7	1.6	58.1
Less than bachelor's	4.8	(#)	(#)
Years since highest degree			
Less than 5	6.5	1.4	45.0
5–9	5.4	1.6	59.3
10–14	6.3	1.3	52.8
15–19	5.6	1.6	52.1
20 or more	5.8	1.6	52.4
Years in current job			
Less than 3	5.5	1.4	53.8
3–5	5.9	1.6	59.0
6–10	5.9	1.6	54.9
11–20	6.0	1.4	47.2
More than 20	6.2	1.5	45.8
Years in higher education			
Less than 3	6.5	1.4	49.2
3–5	5.5	1.5	60.2
6–10	5.3	1.7	56.4
11–20	5.9	1.4	46.2
More than 20	6.3	1.6	52.4

#Too small to report.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Based on reports of whether up to five for-credit classes were identified as being taught through a distance education program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table 4.—Among instructional faculty and staff at degree-granting institutions, percentage teaching distance education classes for credit, and number and percentage of such classes taught, by computer and institutional characteristics: Fall 1998

Characteristic	Percent teaching distance education class	Of those teaching a distance education class:	
		Number of distance education classes	Percent of for-credit classes taught through distance education program
Total	5.9	1.5	52.4
Internet access			
Both at home and at work	6.1	1.5	47.9
At work only	5.6	1.4	47.4
At home only	5.1	1.6	75.7
Neither home nor work	6.6	1.7	68.6
Institution's computing resources[1]			
Poor	4.8	1.5	60.2
Fair	5.9	1.6	53.9
Good	5.4	1.5	48.8
Excellent	6.9	1.5	48.5
Institution type			
Public doctoral	5.2	1.5	53.5
Private not-for-profit doctoral	3.5	1.4	58.2
Public comprehensive	6.4	1.3	43.4
Private not-for-profit comprehensive	6.0	1.5	56.6
Private not-for-profit liberal arts	3.1	1.4	40.5
Public 2-year	7.8	1.6	53.8
Other[2]	5.5	1.7	59.7
Total FTE enrollment			
1,500 or less	4.9	1.5	52.4
1,501–6,000	6.9	1.6	56.2
6,001–12,000	6.0	1.3	46.6
12,001–24,000	5.6	1.4	50.3
More than 24,000	3.3	1.3	51.1

[1]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

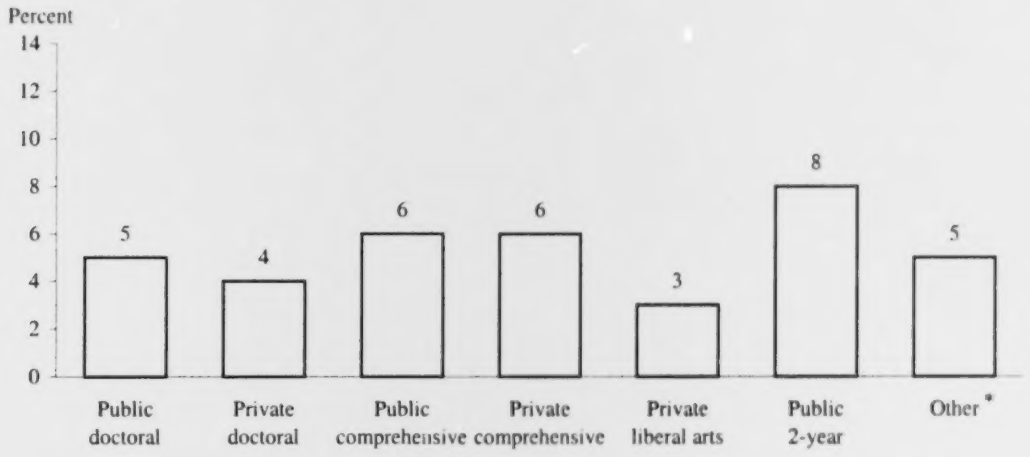
[2]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Based on reports of whether up to five for-credit classes were identified as being taught through a distance education program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

through such programs (figure 2). This result is somewhat consistent with the 1997–98 institution-level survey that found that public 2- and 4-year institutions were much more likely to offer distance education courses than private institutions (Lewis et al. 1999). Institution type was not associated with the number or proportion of distance education classes taught among those who did teach these classes.

Figure 2.—Percentage of instructional faculty and staff at degree-granting institutions who taught distance education classes, by institution type: Fall 1998



*Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Expanding access to education and easing capacity constraints are two common reasons for building more extensive distance education programs (Oblinger, Barone, and Hawkins 2001). Yet practitioners have found that quality distance education programs are costly (American Council on Education 2000; University of Illinois Teaching at a Distance Seminar 1999). Large institutions are already geared toward widespread access to postsecondary education, and may also be in the position to take advantage of economies of scale in building the infrastructure to support distance education. However, the size of the institution, as measured by its full-time-

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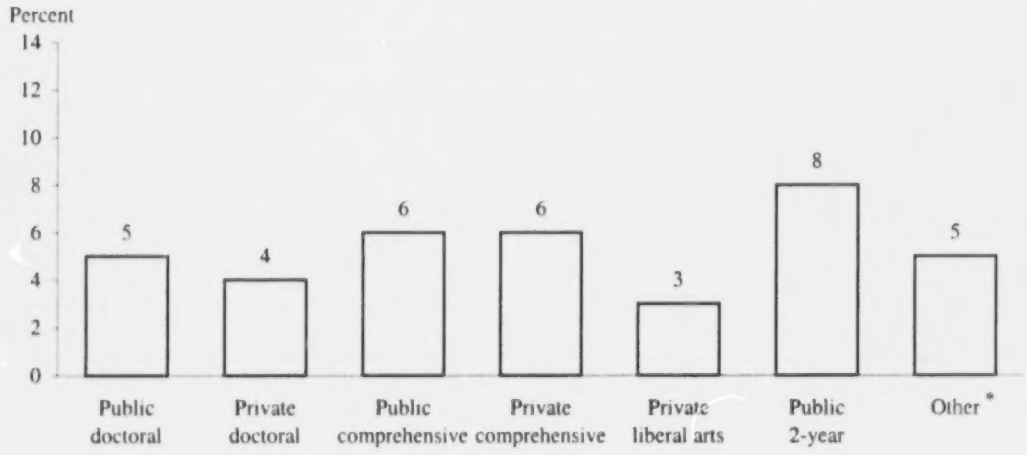
Figure 2.—Percentage of instructional faculty and staff at degree-granting institutions who taught distance education classes, by institution type: Fall 1998



*Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Expanding access to education and easing capacity constraints are two common reasons for building more extensive distance education programs (Oblinger, Barone, and Hawkins 2001). Yet practitioners have found that quality distance education programs are costly (American Council on Education 2000; University of Illinois Teaching at a Distance Seminar 1999). Large institutions are already geared toward widespread access to postsecondary education, and may also be in the position to take advantage of economies of scale in building the infrastructure to support distance education. However, the size of the institution, as measured by its full-time-

education classes were considerably more likely than those who did not teach distance education classes to have also indicated that they taught non–face-to-face classes. Nevertheless, among those who did not teach distance education classes, about 6 percent indicated that they taught at least one class using a primarily non–face-to-face medium. Of those who did teach distance education classes, about one-third (36 percent) indicated that they taught only face-to-face classes (that is, identified their distance education classes as using primarily face-to-face instruction). Although this appears to be an inconsistency, there are several possible explanations for this result. Classes offered through distance education programs need not be *exclusively* offered at a distance; mixed media might be common for such classes, and they may have considerable face-to-face instruction even if the use of other delivery mechanisms has caused the classes to be identified as belonging to distance education programs. Alternatively, if such classes are taught using two-way real-time video technology, the instructors might consider them to be face-to-face instruction. Finally, an instructor may teach a class that is available both in the classroom and at a distance, so that the primary medium for the class is face-to-face, even though it is also available to distance education students (Oblinger, Barone, and Hawkins 2001).

Table 5 shows the percentage of instructional faculty and staff teaching any primarily non–face-to-face classes, as well as the percentage teaching any of the specific types of non–face-to-face classes (those having a computer-based, TV-based, or other primary medium) by demographic characteristics. Female faculty were slightly more likely than their male colleagues to teach these classes (10 versus 8 percent). However, race/ethnicity and age were not associated with teaching non–face-to-face classes.

Academic discipline was associated with teaching non–face-to-face classes (table 6). Instructional faculty and staff in engineering and computer science were more likely than average to teach any non–face-to-face classes (17 versus 9 percent), and to teach any computer-based classes specifically (15 versus 6 percent). Those in the humanities were less likely than average to teach any classes using any non–face-to-face medium or computer-based communication. These differences are consistent with patterns suggested by the American Council on Education (2000), although at the institution level, distance education courses in English, humanities, and social or behavioral sciences were offered by more institutions than courses in other fields (Lewis et al. 1999). However, other aspects of faculty members' appointments were generally not associated with teaching any non–face-to-face classes or with teaching the specific types of classes. Instructional staff with faculty status were slightly more likely to teach classes with a TV-based or "other" primary medium, although the percentages doing so were generally rather small—about 2 percent of those with faculty status for each type of class, compared with about 1 percent of others.

Table 5.—Among instructional faculty and staff at degree-granting institutions, percentage teaching at least one for-credit class using non–face-to-face primary media, by demographic characteristics: Fall 1998

Characteristic	Any non–face-to-face	Any computer-based	Any TV-based	Any other primary medium
Total	9.0	5.8	2.1	2.2
Race/ethnicity				
White, non-Hispanic	8.7	5.5	2.1	2.2
Black, non-Hispanic	9.9	6.0	1.9	3.5
Asian/Pacific Islander	12.1	9.4	1.3	1.8
Hispanic	10.1	7.3	2.6	1.0
American Indian/Alaskan Native	15.6	7.7	0.0	9.0
More than one race/ethnicity	10.7	5.5	3.0	4.0
Gender				
Male	8.2	5.4	1.9	1.8
Female	10.2	6.3	2.3	2.9
Age				
Under 35	8.3	5.7	1.7	1.4
35–44	8.5	5.4	1.7	2.2
45–54	10.3	6.6	2.6	2.4
55–64	8.2	5.0	2.2	2.3
65 or older	8.1	5.7	0.9	2.3

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Based on reports of the primary medium of instruction used for each of up to five for-credit classes. Options were face-to-face, computer, TV-based, or other. Respondents who indicated a primary medium of computer, TV-based, or other for any class are included in the first column.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

The likelihood of faculty teaching non–face-to-face classes was associated with their level of education (table 7). Faculty with doctorates were less likely than those whose highest degree was a master's or bachelor's degree to teach any non–face-to-face classes. Furthermore, those with higher degrees were generally less likely to teach any classes primarily using a computer-based medium. However, experience was generally not related to teaching these types of classes, except that those with more total years of teaching experience in higher education were more likely to teach at least one TV-based class.

Table 6.—Among instructional faculty and staff at degree-granting institutions, percentage teaching at least one for-credit class using non–face-to-face primary media, by employment and teaching characteristics: Fall 1998

Characteristic	Any non–face-to-face	Any computer-based	Any TV-based	Any other primary medium
Total	9.0	5.8	2.1	2.2
Faculty status				
Yes	9.0	5.7	2.1	2.3
No	8.5	6.8	1.1	1.1
Employment intensity				
Full-time	9.5	6.0	2.2	2.5
Part-time	8.4	5.4	1.9	2.0
Academic rank				
Full professor	8.5	5.5	2.5	1.7
Associate professor	8.3	4.3	2.3	2.4
Assistant professor	9.2	6.2	2.0	2.6
Instructor	9.9	6.3	2.1	2.5
Lecturer	8.6	6.8	0.9	1.2
Other	7.3	4.7	0.7	2.2
No rank	12.5	8.0	4.0	2.9
Tenure status				
Tenured	9.1	5.6	2.5	2.2
Tenure-track	8.3	5.7	1.4	2.1
Non–tenure-track	8.5	5.7	1.5	2.1
No tenure system	11.2	6.5	3.6	3.0
Type of appointment				
Regular	9.2	5.7	2.2	2.3
Temporary	8.7	5.8	1.8	2.1
Teaching discipline				
Business	12.7	9.0	3.0	1.7
Education	11.1	6.7	2.1	3.5
Engineering/computer science	16.9	15.3	1.5	1.6
Fine arts	6.4	3.7	1.2	2.0
Health sciences	11.2	5.7	3.3	4.3
Human services	8.7	4.3	2.4	2.7
Humanities	5.5	3.1	1.9	1.7
Life sciences	5.7	3.6	0.9	1.7
Natural/physical sciences and math	6.6	4.0	2.0	1.6
Social sciences	7.0	3.7	2.1	1.8
Vocational	13.6	10.2	1.9	2.6

See footnotes at end of table.

Table 6.—Among instructional faculty and staff at degree-granting institutions, percentage teaching at least one for-credit class using non–face-to-face primary media, by employment and teaching characteristics: Fall 1998—Continued

Characteristic	Any non–face-to-face	Any computer-based	Any TV-based	Any other primary medium
Level of classroom instruction*				
Undergraduate only	8.9	5.8	1.9	2.2
Both undergraduate and graduate	11.1	6.9	3.5	2.9
Graduate only	8.0	4.7	1.9	1.8

*Based on reports of the primary level of students in up to five for-credit classes.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Based on reports of the primary medium of instruction used for each of up to five for-credit classes. Options were face-to-face, computer, TV-based, or other. Respondents who indicated a primary medium of computer, TV-based, or other for any class are included in the first column.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Computer resources were associated with the likelihood of teaching any non–face-to-face classes (table 8). Instructional faculty and staff who rated their institution's computing resources as poor were less likely than others to teach any non–face-to-face classes (5 versus 9–11 percent), and their rating of computer resources was also associated with their likelihood of teaching any computer-based classes. Also, respondents who had Internet access both at home and at work were slightly more likely than those who did not have Internet access at home to teach any non–face-to-face classes. This pattern was also found for teaching any primarily computer-based classes.[7] Institution type and size were related to teaching any non–face-to-face classes. Instructional faculty and staff at public 2-year institutions were more likely than those at doctoral institutions or private liberal arts colleges to teach any non–face-to-face classes (12 versus 5–8 percent; figure 4). This pattern was also found for teaching any computer-based classes (table 8). Also, faculty at institutions with larger FTE enrollments were less likely than their colleagues at institutions with fewer students enrolled to teach any non–face-to-face classes.

[7]Computer-based classes do not necessarily refer to Internet communication. A minority of faculty members have Internet access at home only (12 percent) or no Internet access at all (7 percent). While it may be surprising that any faculty in these categories teach computer-based courses, the proportions are very small, so that 0.6 percent of all faculty have Internet access at home only and teach a computer-based class, and 0.2 percent of all faculty have no Internet access but teach a computer-based class.

Table 7.—Among instructional faculty and staff at degree-granting institutions, percentage teaching at least one for-credit class using non–face-to-face primary media, by education and experience: Fall 1998

Characteristic	Any non–face-to-face	Any computer-based	Any TV-based	Any other primary medium
Total	9.0	5.8	2.1	2.2
Highest degree				
Doctor's	6.9	4.1	1.6	1.9
First-professional	10.3	6.7	2.3	3.4
Master's	10.5	6.5	2.7	2.5
Bachelor's	10.8	8.6	1.3	2.0
Less than bachelor's	9.8	8.3	1.1	1.4
Years since highest degree				
Less than 5	8.8	6.5	1.5	1.5
5–9	9.0	5.4	2.4	2.3
10–14	10.6	6.8	2.1	2.7
15–19	8.4	5.3	1.5	2.2
20 or more	8.6	5.3	2.3	2.3
Years in current job				
Less than 3	8.8	6.1	1.7	1.7
3–5	8.8	5.5	2.0	2.6
6–10	8.9	5.5	1.9	2.6
11–20	9.5	5.9	2.3	2.3
More than 20	9.0	5.7	2.7	2.1
Years in higher education				
Less than 3	10.0	7.7	0.8	2.2
3–5	7.7	5.2	1.5	1.7
6–10	8.5	4.8	1.8	2.6
11–20	9.9	6.4	2.5	2.2
More than 20	8.9	5.5	2.7	2.4

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Based on reports of the primary medium of instruction used for each of up to five for-credit classes. Options were face-to-face, computer, TV-based, or other. Respondents who indicated a primary medium of computer, TV-based, or other for any class are included in the first column.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF-99), Data Analysis System.

Table 8.—Among instructional faculty and staff at degree-granting institutions, percentage teaching at least one for-credit class using non–face-to-face primary media, by computer and institutional characteristics: Fall 1998

Characteristic	Any non–face-to-face	Any computer-based	Any TV-based	Any other primary medium
Total	9.0	5.8	2.1	2.2
Internet access				
Both at home and at work	10.2	7.0	2.0	2.3
At work only	7.4	4.4	1.9	1.9
At home only	8.6	4.9	2.5	2.6
Neither home nor work	6.4	2.9	2.1	2.5
Institution's computing resources[1]				
Poor	5.5	3.7	0.6	1.2
Fair	10.1	5.8	2.1	3.0
Good	8.6	5.6	2.1	2.1
Excellent	10.6	7.5	2.2	2.3
Institution type				
Public doctoral	7.6	4.6	1.6	2.2
Private not-for-profit doctoral	5.6	3.5	1.4	1.2
Public comprehensive	8.8	5.8	1.8	2.2
Private not-for-profit comprehensive	9.4	6.2	1.5	2.7
Private not-for-profit liberal arts	4.9	2.5	0.8	2.0
Public 2-year	12.0	7.8	3.2	2.5
Other[2]	10.4	7.7	2.4	2.4
Total FTE enrollment				
1,500 or less	9.1	6.1	1.6	2.3
1,501–6,000	10.3	6.4	2.6	2.9
6001–12,000	8.0	5.0	2.2	1.7
12,001–24,000	8.8	6.0	1.7	1.8
More than 24,000	4.8	2.8	1.2	1.5

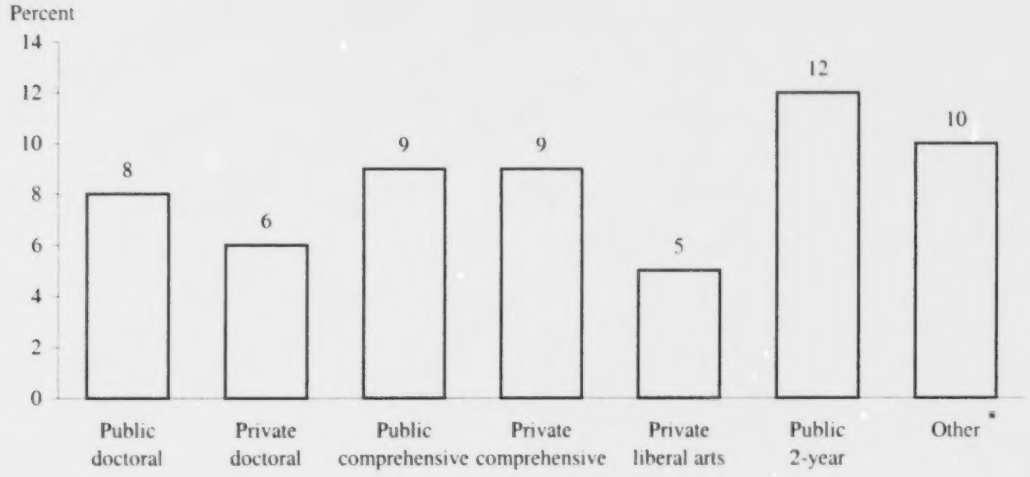
[1]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[2]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Based on reports of the primary medium of instruction used for each of up to five for-credit classes. Options were face-to-face, computer, TV-based, or other. Respondents who indicated a primary medium of computer, TV-based, or other for any class are included in the first column.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Figure 4.—Percentage of instructional faculty and staff at degree-granting institutions who taught non–face-to-face classes, by institution type: Fall 1998



*Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Non–face-to-face classes are those taught with a computer, TV-based, or other non–face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Analysis of Teaching Distance Classes After Controlling for Selected Characteristics

Tables 2 and 4 showed that level of classroom instruction and institution type were associated with the percentage of faculty teaching distance education classes. Several variables were shown to be associated with teaching non–face-to-face classes, including institutional characteristics, teaching discipline, and highest degree attained (tables 5–8). However, some of these variables may be interrelated: faculty teaching in public 2-year institutions, for example, only teach classes to undergraduates. Thus, to understand the unique relationship of each variable to teaching the two types of distance classes[8] while controlling for the relationship among the variables,

[8]For the remainder of this report, the term "distance classes" is used to refer to results for both distance education classes and non–face-to-face classes. In cases where the discussion applies to only one of the two types of classes, the type is specified.

multiple linear regression techniques were used in this analysis. For more information about this methodology, see appendix B.

Two analyses were conducted: one for the proportion of faculty teaching distance education classes, and the other for the proportion teaching non–face-to-face classes. Although the variables associated with teaching these two types of classes differed, all were included in both analyses, since teaching these types of classes were related to each other. Although employment intensity was not associated with the likelihood of teaching either type of distance class, it is strongly associated with many other aspects of instruction, and analyses in the remainder of the report are conducted separately for full- and part-time faculty. For these reasons, employment intensity was also included in the regressions shown here.

Table 9 presents the results for a regression analysis of the percentage of instructional faculty and staff who taught distance education classes, while table 10 presents the analysis for the percentage of faculty teaching non–face-to-face classes. The first column contains the unadjusted percentages—that is, the percentages before controlling for the other variables, as shown above. Regression coefficients were used to produce the adjusted percentages shown in the second column (holding the other variables constant). For each row variable in the table, the category in italics is the reference category for comparisons and tests of statistical significance. Numbers with asterisks in the first and second columns indicate that the percentage of faculty teaching distance classes in that category is significantly different from the percentage for the reference category. Rows containing an asterisk in only one of these columns indicate cases in which the adjustment procedure leads to a different conclusion than one would reach based on the unadjusted averages.

As discussed above, few variables were associated with the probability of teaching any distance education classes (table 9). Both the level of classroom instruction and institution type were associated with teaching this type of distance class in the bivariate analysis, and those relationships persist even after controlling for a variety of other variables. In fact, when controlling for the covariation of the variables listed in table 9, instructional faculty and staff at public doctoral institutions were also significantly less likely than their counterparts at public 2-year institutions to teach any distance education classes, along with those from private doctoral and liberal arts institutions as found earlier.

Other characteristics of faculty and their institutions were associated with their likelihood of teaching non–face-to-face classes, as discussed above. However, table 10 shows that many of these differences no longer existed once the covariation of all variables was taken into account. For example, after adjusting for the relationships among these variables, female faculty were no

Table 9.—Among instructional faculty and staff at degree-granting institutions, percentage teaching any distance education classes and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	5.87	5.90	9.04	3.23
Gender				
Male	*5.22*	*5.30*	†	†
Female	6.78	6.80	1.50	0.86
Employment intensity				
Full-time	*5.97*	*6.20*	†	†
Part-time	5.73	5.50	-0.67	0.95
Teaching discipline				
Business	8.67	8.40	2.80	2.02
Education	6.85	6.00	0.37	2.05
Engineering/computer science	*5.44*	*5.60*	†	†
Fine arts	3.27	3.60	-2.02	2.06
Health sciences	7.46	6.90	1.26	1.90
Human services	7.14	7.50	1.86	2.30
Humanities	4.65	4.50	-1.15	1.77
Life sciences	3.22	3.90	-1.69	2.16
Natural/physical sciences and math	4.85	5.10	-0.54	1.93
Social sciences	5.96	6.10	0.52	1.79
Vocational	9.07	9.70	4.07	2.50
Level of classroom instruction[6]				
Undergraduate only	5.46*	5.10*	-5.25	1.39
Both undergraduate and graduate	*9.14*	*10.30*	†	†
Graduate only	5.42*	6.50*	-3.82	1.63
Highest degree				
Doctor's	*4.82*	*5.40*	†	†
First-professional	7.12	7.00	1.64	1.68
Master's	7.03	6.90	1.47	1.08
Bachelor's	4.66	3.80	-1.61	1.74
Less than bachelor's	4.75	1.70	-3.72	2.77
Internet access				
Both at home and at work	*6.09*	*6.00*	†	†
At work only	5.55	5.60	-0.34	0.95
At home only	5.12	5.20	-0.75	1.38
Neither home nor work	6.62	7.00	0.98	1.67

See footnotes at end of table.

Table 9.—Among instructional faculty and staff at degree-granting institutions, percentage teaching any distance education classes and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*4.83*	*4.70*	†	†
Fair	5.86	5.70	1.03	1.89
Good	5.35	5.40	0.71	1.80
Excellent	6.92	6.90	2.15	1.86
Institution type				
Public doctoral	5.19	5.00*	-3.51	1.60
Private not-for-profit doctoral	3.50*	3.00*	-5.48	1.79
Public comprehensive	6.42	6.10	-2.39	1.45
Private not-for-profit comprehensive	6.02	5.20	-3.27	1.72
Private not-for-profit liberal arts	3.08*	3.40*	-5.14	1.73
Public 2-year	*7.77*	*8.50*	†	†
Other[8]	5.45	5.50	-3.01	1.87
Total FTE enrollment				
1,500 or less	4.90	5.50	1.46	2.14
1,501–6,000	6.88*	6.60	2.50	1.86
6,001–12,000	5.98*	5.90	1.79	1.83
12,001–24,000	5.56	5.70	1.65	1.63
More than 24,000	*3.32*	*4.10*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The percentages are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient, multiplied by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table 10.—Among instructional faculty and staff at degree-granting institutions, percentage teaching any non–face-to-face classes and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	9.00	9.00	17.29	4.67
Gender				
Male	*8.17*	*8.10*	†	†
Female	10.18*	10.30	2.15	1.25
Employment intensity				
Full-time	*9.48*	*10.20*	†	†
Part-time	8.35	7.40*	-2.72	1.37
Teaching discipline				
Business	12.69	12.10	-4.64	2.92
Education	11.13	10.50*	-6.25	2.96
Engineering/computer science	*16.92*	*16.70*	†	†
Fine arts	6.35*	6.60*	-10.10	2.98
Health sciences	11.24*	10.20*	-6.53	2.75
Human services	8.66*	8.90*	-7.83	3.33
Humanities	5.47*	5.40*	-11.31	2.55
Life sciences	5.65*	6.80*	-9.92	3.13
Natural/physical sciences and math	6.58*	7.00*	-9.68	2.79
Social sciences	6.98*	7.40*	-9.30	2.59
Vocational	13.59	13.40	-3.30	3.61
Level of classroom instruction[6]				
Undergraduate only	8.87	8.50	-3.75	2.01
Both undergraduate and graduate	*11.08*	*12.20*	†	†
Graduate only	8.03	9.20	-3.05	2.35
Highest degree				
Doctor's	*6.90*	*7.60*	†	†
First-professional	10.27	10.80	3.23	2.43
Master's	10.47*	10.30	2.71	1.56
Bachelor's	10.80*	9.10	1.55	2.51
Less than bachelor's	9.84	5.70	-1.89	4.01
Internet access				
Both at home and at work	*10.19*	*9.80*	†	†
At work only	7.42*	7.60	-2.20	1.38
At home only	8.64	9.30	-0.46	1.99
Neither home nor work	6.35*	7.30	-2.50	2.41

See footnotes at end of table.

Table 10.—Among instructional faculty and staff at degree-granting institutions, percentage teaching any non–face-to-face classes and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*5.46*	*5.60*	†	†
Fair	10.13*	9.70	4.15	2.73
Good	8.61*	8.40	2.80	2.60
Excellent	10.60*	10.10	4.50	2.69
Institution type				
Public doctoral	7.58*	7.20*	-5.38	2.31
Private not-for-profit doctoral	5.64*	5.60*	-6.91	2.59
Public comprehensive	8.84	9.10	-3.46	2.10
Private not-for-profit comprehensive	9.37	9.00	-3.53	2.48
Private not-for-profit liberal arts	4.91*	5.30*	-7.24	2.50
Public 2-year	*12.02*	*12.60*	†	†
Other[8]	10.41	10.40	-2.15	2.71
Total FTE enrollment				
1,500 or less	9.13*	9.50	2.97	3.09
1,501–6,000	10.34*	9.70	3.13	2.69
6,001–12,000	7.99*	7.90	1.37	2.64
12,001–24,000	8.81*	9.60	3.05	2.36
More than 24,000	*4.83*	*6.50*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The percentages are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient, multiplied by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

longer any more or less likely than male faculty to teach non–face-to-face classes. Also, after controlling for other variables, the highest degree, Internet access, institutional FTE enrollment, and rating of the quality of institutional computing resources of instructional faculty and staff were no longer significantly related to teaching non–face-to-face classes. However, faculty in

teaching fields such as the fine arts and social sciences were still less likely than those in engineering/computer science to teach non–face-to-face classes. Similarly, instructors in doctoral and private liberal arts institutions were still less likely than those in public 2-year institutions to teach non–face-to-face classes after taking into account covariation. On the other hand, while the unadjusted percentages of full- and part-time faculty who taught non–face-to-face classes were comparable, after taking other variables into account, part-time faculty were less likely than full-time faculty to teach such distance classes.

Summary

Overall, about 6 percent of instructional faculty and staff with some for-credit instructional duties indicated that they taught any distance education classes, and 9 percent reported teaching any primarily non–face-to-face classes. Few characteristics were associated with either dimension of participation in distance education. Only institution type was associated both with teaching any distance education classes and with teaching any non–face-to-face classes: faculty at public 2-year institutions were more likely than those at private not-for-profit doctoral or liberal arts institutions to teach either type of distance class, even after controlling for variation associated with other selected variables.

Apart from this finding, however, factors associated with teaching the two types of classes differed somewhat. Instructional faculty and staff who taught both undergraduate and graduate students were somewhat more likely than those who taught only one level to teach a class offered through a distance education program, but this factor was not associated with teaching non–face-to-face classes. Faculty with doctoral degrees were less likely than those whose highest degree was a master's or bachelor's degree to teach non–face-to-face classes, and having better institutional computing resources and having access to the Internet both at home and at work were related to teaching these classes. However, having these resources was not related to teaching distance education classes and was no longer related to teaching non–face-to-face classes after taking into account the relationships among these and other variables such as institution type. As mentioned previously (American Council on Education 2000), academic discipline was associated with teaching non–face-to-face classes: faculty in engineering and computer science were more likely than average to teach non–face-to-face classes, and computer-based classes specifically, whereas those in the humanities were less likely to do so.

Although teaching a distance education class is associated with a greater likelihood of teaching any non–face-to-face class, the former group is not just a subset of the larger group who taught a class using a non–face-to-face primary medium. This finding, and the differences in factors associated with teaching distance education classes and non–face-to-face classes, suggest

that these two variables capture distinct dimensions of faculty participation in distance education. To the extent that teaching a class offered through a distance education program is a more formal, institutionally recognized practice, the results suggest that the minority of faculty who did so in fall 1998 were generally not very different from their colleagues. However, among those who did teach such classes, those instructional faculty and staff with less attachment to the institution, such as part-time, temporary, or non–tenure-track employees, taught a higher proportion of their classes through such programs than their peers. While the proportion of faculty to which such results apply is relatively small, these results are consistent with suggestions that institutional strategies might favor delegating specific distance education classes to short-term or part-time faculty (Lynch and Corry 1998; Monaghan 1996).

Workload and Compensation

Although the NSOPF:99 survey did not ask faculty members about the contractual arrangements made for specific distance or traditional classes, it is possible to conduct a general appraisal of whether workload and compensation differ for those who do or do not teach distance classes. Overall, the teaching load was somewhat higher for instructional faculty and staff who taught distance classes than for those who did not (table 11 and figure 5). Both full- and part-time faculty teaching distance classes taught about one class or section more overall than their counterparts who did not teach such classes. Full-time faculty teaching any classes through a distance education program taught an average of about 5.0 classes or sections overall, compared with 3.6 classes for those who did not teach through such a program. Part-time faculty teaching distance classes taught about 3.5 classes or sections, while their counterparts not doing so taught about 2.5 classes.

The difference in teaching loads may be associated with institution type since full-time faculty at public 2-year institutions, who were more likely to teach distance classes, generally teach more classes.[9] However, as figure 6 shows, the difference in number of classes taught according to whether instructional faculty and staff taught distance classes generally persists even *within* institution type for full-time faculty.

The difference in overall teaching load appeared to be due to teaching more for-credit classes or sections (table 11). Although distance and nondistance education faculty and instructional staff differed in the number of for-credit classes or sections they taught, teaching distance classes was not associated with the number of noncredit classes taught. Full-time faculty who taught non–face-to-face classes had about 4.5 for-credit classes, while their counterparts who did

[9]U.S. Department of Education, National Center for Education Statistics, 1999 National Study of Postsecondary Faculty, Data Analysis System. About 28 percent of all faculty and instructional staff were employed at public 2-year institutions.

Table 11.—Average teaching load of instructional faculty and staff at degree-granting institutions, by whether they taught for-credit distance classes and employment status: Fall 1998

Distance teaching	Number of classes/ sections taught			Number of different course preparations	Average class size	
	Total	For credit	Non-credit		For credit[1]	Non-credit
			Full-time			
Total	3.3	3.4	0.3	2.6	31.5	41.4
Taught any distance education program class[2]						
Yes	5.0	4.7	0.3	3.1	31.1	35.3
No	3.6	3.4	0.3	2.5	31.5	41.5
Taught any primarily non–face-to-face class[3]	4.7	4.5	0.2	3.1	29.3	35.6
Any computer-based class	4.8	4.6	0.2	3.2	28.5	38.9
Any TV-based class	4.6	4.4	0.2	3.1	30.7	(#)
Any class using other primary medium	5.0	4.7	0.3	2.9	29.8	(#)
Did not teach non–face-to-face class	3.6	3.3	0.3	2.5	31.7	41.6
			Part-time			
Total	2.4	2.2	0.3	1.6	23.9	28.0
Taught any distance education program class[2]						
Yes	3.5	3.3	0.2	1.9	25.4	(#)
No	2.5	2.2	0.3	1.6	23.8	27.4
Taught any primarily non–face-to-face class[3]	3.5	3.1	0.4	1.9	25.5	27.7
Any computer-based class	3.7	3.2	0.5	2.0	25.2	(#)
Any TV-based class	3.1	2.7	0.4	1.8	33.1	(#)
Any class using other primary medium	3.8	3.6	0.2	1.9	25.7	(#)
Did not teach non–face-to-face class	2.5	2.2	0.3	1.5	23.7	27.4

#Too small to report.

[1]Refers to average of up to five for-credit classes for which respondents were asked to give class size.

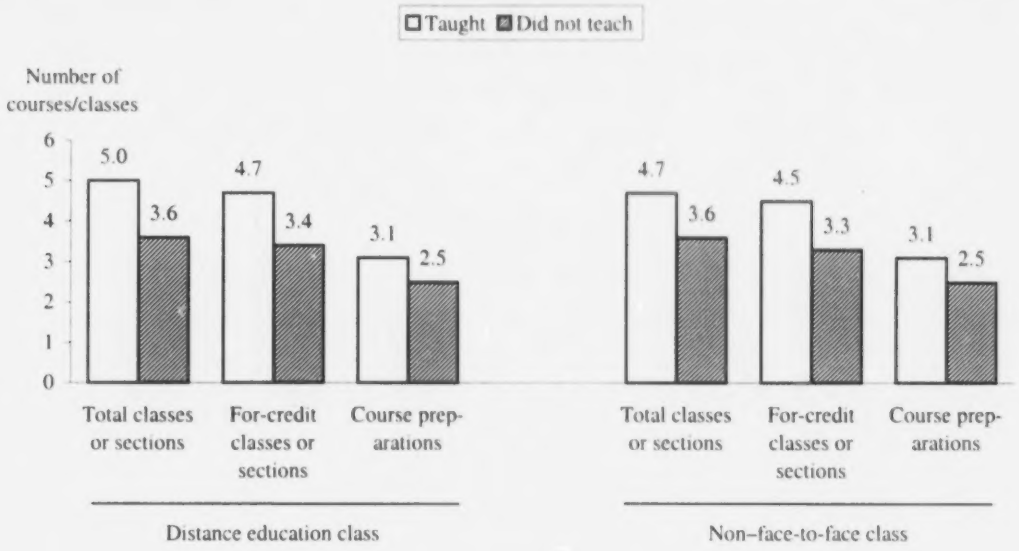
[2]For up to five for-credit classes or sections, respondents were asked to indicate whether the class was taught through a distance education program.

[3]For up to five for-credit classes or sections, respondents were asked to indicate the primary medium used to teach the class. Options were face-to-face, computer, TV-based, or other.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Detail may not sum to totals due to rounding or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Figure 5.—Average teaching load of full-time instructional faculty and staff at degree-granting institutions, by participation in distance classes: Fall 1998



NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. Non–face-to-face classes are those taught with a computer, TV-based, or other non–face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

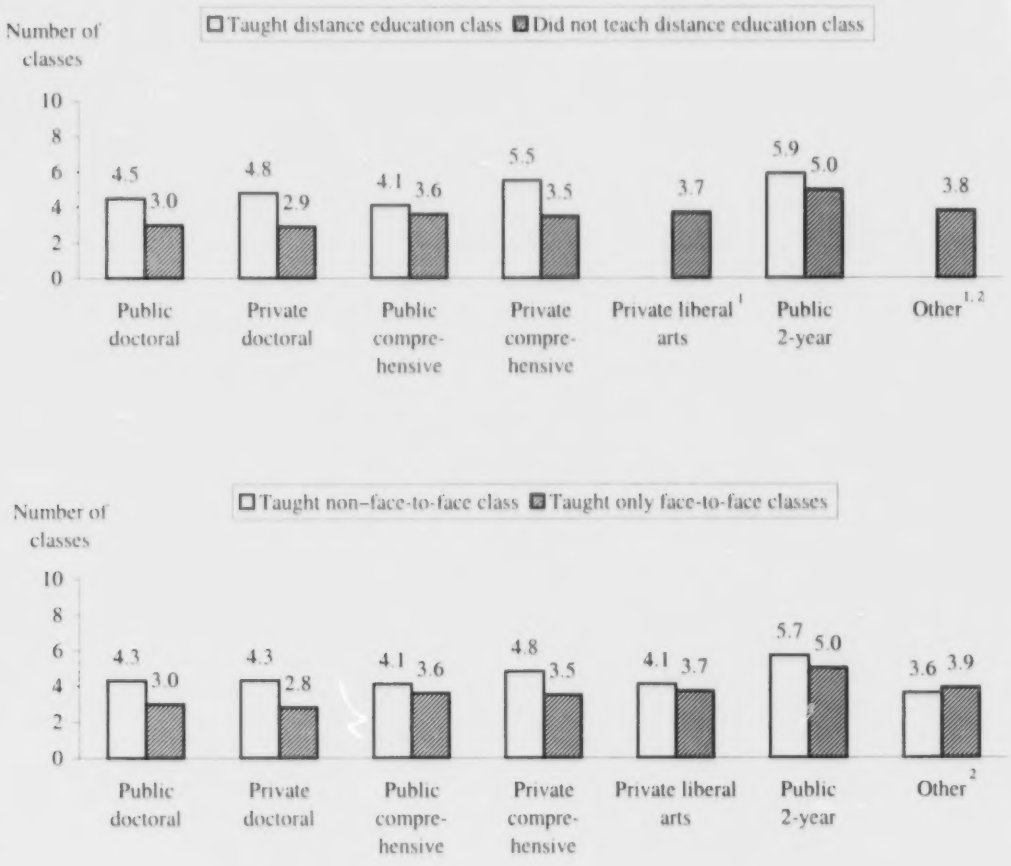
not teach these classes averaged 3.3 for-credit classes.[10] Both groups, however, taught an average of about 0.25 noncredit classes, a pattern that held for both full-time and part-time faculty.

The higher workload for distance education faculty and staff was not only a matter of teaching more sections of classes but also of carrying more course preparations. This was true for both full- and part-time employees. Full-time faculty teaching distance classes had an average of about 3.1 course preparations in fall 1998, about a half course more than those who did not teach such classes (about 2.5 course preparations). The difference in number of course preparations taught by involvement in distance teaching persisted when controlling for other variables such as institution type.[11]

[10]This difference in number of for-credit classes taught by distance teaching persisted even when controlling for other variables such as institution type. See the regression analyses in appendix tables C1 and C2.

[11]See the regression analyses in appendix tables C3 and C4.

Figure 6.—Average number of classes taught by full-time instructional faculty and staff at degree-granting institutions, by participation in distance classes and institution type: Fall 1998



[1]Estimate for percentage teaching distance education classes is too small to report.

[2]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

NOTE: Includes all full-time instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. Non-face-to-face classes are those taught with a computer, TV-based, or other non-face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

The possibility of reaching many more students per class motivates many college and university personnel to build up their distance education offerings (Oblinger, Barone, and Hawkins 2001). However, teaching distance classes was not associated with the average size of fac-

ulty members' for-credit classes. Regardless of whether they taught either type of distance class, full-time faculty taught an average of about 30 students per for-credit class, while part-time faculty had an average of about 25 students.

Table 12 shows the distribution of total work time (paid and unpaid, both inside and outside the institution) for instructional faculty and staff. If teaching loads are larger among full-time faculty teaching distance classes as shown above, they may spend a larger proportion of their work time on teaching activities. However, teaching distance classes was not associated with the percentage of total work time spent on teaching and related activities such as advising students. Among full-time faculty, those who taught distance education classes or non–face-to-face classes spent slightly less of their work time engaged in research than those who did not participate in distance education (10 versus 14 percent). Full-time faculty teaching distance classes also spent a slightly larger proportion of their time in service and other activities than those who did not teach such classes (15–16 versus 13 percent). However, these differences were not found among part-time faculty or when controlling for other variables such as the size of the institution and level of instruction.[12]

As discussed above, the American Association of University Professors (1999) has pointed out that the additional demands associated with teaching distance education require additional compensation. For calendar year 1998, both the base salary received from the institution and other income from the institution—which includes additional amounts earned for teaching overloads, summer sessions, or other activities—were considered in this analysis. While workloads were somewhat higher for those teaching distance classes, teaching distance classes was generally not associated with base salary or with other income that instructional faculty and staff received from the institution (table 13 and figure 7). Among part-time faculty, teaching distance classes was not related to either basic salary or other income. Among full-time faculty, both those who taught distance classes and those who did not earned about $55,000 in calendar year 1998. Those who taught any classes offered through a distance education program earned about $1,720 more in other income from the institution, on average, than those who did not teach distance classes; however, teaching non–face-to-face classes was not associated with other income received.

[12]See the regression analyses in appendix tables C5–C8.

Table 12.—Percentage distribution of work hours of instructional faculty and staff at degree-granting institutions across various activities, by whether they taught for-credit distance classes and employment status: Fall 1998

Distance teaching	Teaching	Research	Administration	Service/other
		Full-time		
Total	56.6	15.2	13.9	14.3
Taught any distance education program class[1]				
Yes	61.9	9.6	12.6	16.0
No	59.9	13.9	13.2	12.9
Taught any primarily non–face-to-face class[2]	62.1	10.1	12.8	15.0
Any computer-based class	62.0	10.6	12.9	14.6
Any TV-based class	62.9	7.7	13.0	16.5
Any class using other primary medium	65.9	9.8	10.5	13.9
Did not teach non–face-to-face class	59.8	14.0	13.2	12.9
		Part-time		
Total	61.7	4.8	3.6	29.9
Taught any distance education program class[1]				
Yes	66.8	4.1	5.2	24.0
No	62.7	4.7	3.2	29.4
Taught any primarily non–face-to-face class[2]	65.6	4.0	4.5	26.0
Any computer-based class	67.6	4.2	2.9	25.4
Any TV-based class	52.1	2.3	9.7	35.9
Any class using other primary medium	72.0	4.5	2.7	20.9
Did not teach non–face-to-face class	62.7	4.8	3.3	29.4

[1]For up to five for-credit classes or sections, respondents were asked to indicate whether the class was taught through a distance education program.

[2]For up to five for-credit classes or sections, respondents were asked to indicate the primary medium used to teach the class. Options were face-to-face, computer, TV-based, or other.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Teaching includes such activities as teaching, course development and preparation, advising students, and working with student organizations. Service activities include paid and unpaid community or public service; service to professional associations; and legal, medical, or counseling services. Other activities include professional development and outside consulting or freelance work. Detail may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table 13.—Salary and other income of instructional faculty and staff at degree-granting institutions, by whether they taught for-credit distance classes and employment status: Calendar year 1998

Distance teaching	Basic salary	Other income[1]
	Full-time	
Total	$56,850	$3,990
Taught any distance education program class[2]		
Yes	55,040	5,640
No	55,150	3,920
Taught any primarily non–face-to-face class[3]	54,160	4,320
Any computer-based class	54,740	4,100
Any TV-based class	54,920	4,740
Any class using other primary medium	53,280	4,080
Did not teach non–face-to-face class	55,240	3,990
	Part-time	
Total	11,610	790
Taught any distance education program class[2]		
Yes	11,550	720
No	11,230	780
Taught any primarily non–face-to-face class[3]	12,930	1,060
Any computer-based class	11,890	1,210
Any TV-based class	13,780	390
Any class using other primary medium	14,400	1,080
Did not teach non–face-to-face class	11,090	750

[1]Other income from the institution includes monetary compensation for such activities as teaching summer sessions, course overloads, coaching, or administrative work.

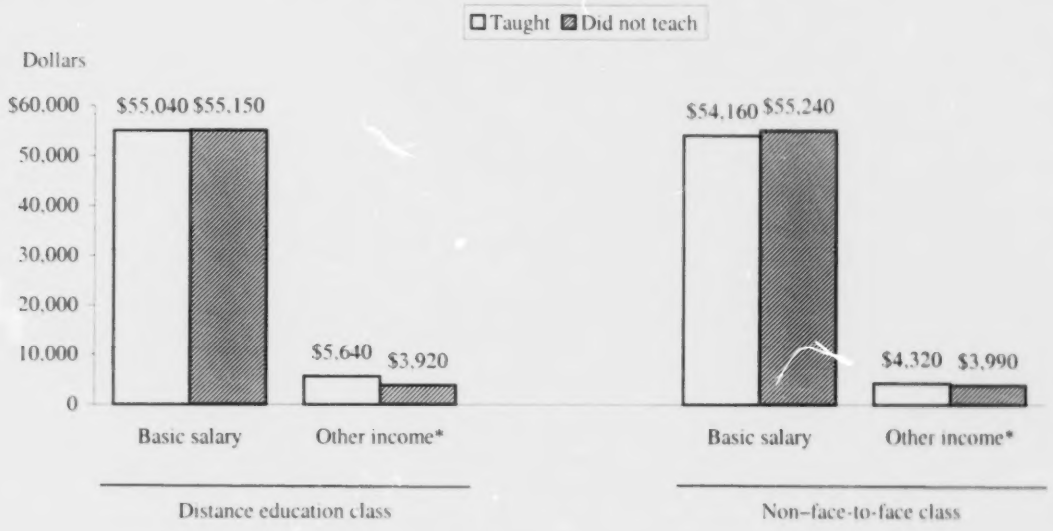
[2]For up to five for-credit classes or sections, respondents were asked to indicate whether the class was taught through a distance education program.

[3]For up to five for-credit classes or sections, respondents were asked to indicate the primary medium used to teach the class. Options were face-to-face, computer, TV-based, or other.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Figures are for calendar year 1998 for income received from the institution at which the respondent was sampled. Estimates are rounded to the nearest $10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Figure 7.—Salary and other income of full-time instructional faculty and staff at degree-granting institutions, by participation in distance classes: Calendar year 1998



*Other income from the institution includes monetary compensation for such activities as teaching summer sessions, course overloads, coaching, or administrative work.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Figures are for calendar year 1998 for income received from the institution at which the respondent was sampled. Estimates are rounded to the nearest 10. Distance education classes refer to any identified as being taught through a distance education program. Non–face-to-face classes are those taught with a computer, TV-based, or other non–face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

This difference between distance education classes and non–face-to-face classes may be related to the dimensions of distance education participation that they capture. Classes that were identified as being taught through a distance education program might tend to involve more formalized contractual arrangements than those simply identified by their primary medium of instruction. If this is so, teaching overload courses through such an arrangement may result in additional compensation. As noted, however, the data do not allow assessment of whether the difference in other income is specifically due to compensation for distance education classes, as opposed to other additional work. It may instead be the case that those faculty who teach distance education classes are more likely to teach summer sessions or to take on additional administrative roles that lead to additional compensation from the institution. However, when controlling

for other variables associated with teaching distance classes such as institution type and academic discipline, even the one difference in other income shown in table 13 was not observed.[13]

Faculty interest groups have suggested that faculty workload may increase as distance education proliferates, a condition that could be exacerbated if distance classes are more time-consuming for instructors than traditional classes (American Association of University Professors 1999; American Council on Education 2000; University of Illinois Teaching at a Distance Seminar 1999). Furthermore, incorporating distance education into faculty schedules as part of their regular teaching loads, as overloads, or on a class-by-class basis has implications for the compensation they receive for their work (Lynch and Corry 1998). The data in this section suggest that instructors of distance classes do have larger teaching loads than teachers of other classes, but teaching distance classes did not appear to be associated with their compensation from the institution.

Student-Faculty Interaction

Another recurrent theme in the distance education literature is the importance of student-faculty interaction. Proponents and critics alike stress that such interaction is crucial to the learning process, but they disagree over whether the student who participates in distance education has the same quality of interaction with faculty, in terms of educational value, as the on-campus student (Gladieux and Swail 1999; Sherron and Boettcher 1997). The American Council on Education (2000) specifically asked how the development of online courses would affect office hours and contact hours. NSOPF:99 included these indicators as well as e-mail communication with students.

Among full-time faculty, those teaching distance classes, whether through distance education programs or as classes using a primary medium other than face-to-face instruction, held slightly more office hours per week than those not teaching these classes (7.2–7.5 versus 6.4 hours; table 14 and figure 8). Among part-time faculty, however, teaching distance classes was not related to the number of office hours held per week.

[13]See the regression analyses shown in appendix tables C9–C12.

Table 14.—Number of office hours and student contact hours per week among instructional faculty and staff at degree-granting institutions, by whether they taught for-credit distance classes and employment status: Fall 1998

Distance teaching	Office hours per week	Student contact hours per week[1]
	Full-time	
Total	6.6	320.5
Taught any distance education program class[2]		
Yes	7.5	368.0
No	6.4	317.5
Taught any primarily non–face-to-face class[3]	7.2	371.5
Any computer-based class	7.0	375.6
Any TV-based class	7.7	368.0
Any class using other primary medium	7.5	380.3
Did not teach non–face-to-face class	6.4	315.2
	Part-time	
Total	2.0	175.5
Taught any distance education program class[2]		
Yes	1.8	242.4
No	2.0	171.5
Taught any primarily non–face-to-face class[3]	1.8	236.7
Any computer-based class	1.4	241.9
Any TV-based class	2.4	247.4
Any class using other primary medium	2.6	266.4
Did not teach non–face-to-face class	2.0	170.0

[1]Student contact hours are calculated as follows: hours per week spent teaching a given class multiplied by the number of students in the class, summed for up to five for-credit classes for which the respondent was asked to provide information.

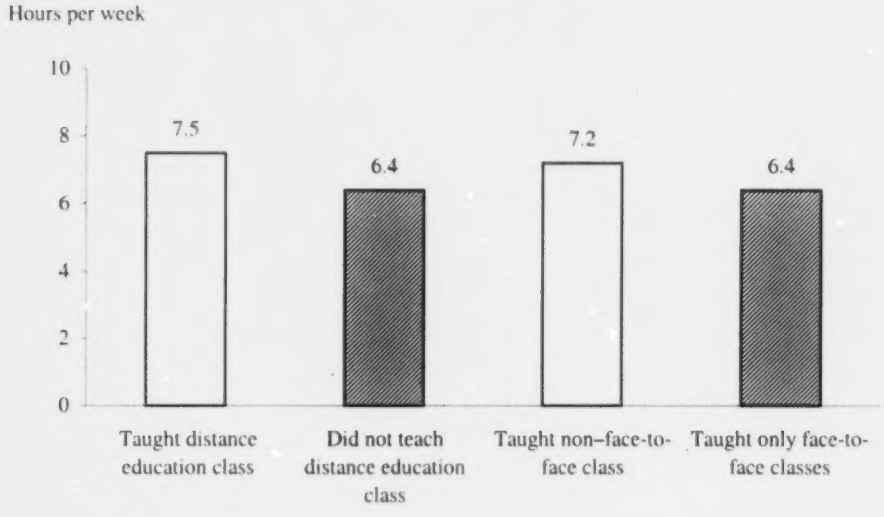
[2]For up to five for-credit classes or sections, respondents were asked to indicate whether the class was taught through a distance education program.

[3]For up to five for-credit classes or sections, respondents were asked to indicate the primary medium used to teach the class. Options were face-to-face, computer, TV-based, or other.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Figure 8.—Average office hours per week among full-time instructional faculty and staff at degree-granting institutions, by participation in distance classes: Fall 1998



NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. Non–face-to-face classes are those taught with a computer, TV-based, or other non–face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Student contact hours per week take into account the number of classes taught, the size of those classes, and the number of hours the faculty member spent teaching those classes on average each week. Instructional faculty and staff who taught distance classes reported more student contact hours per week than those who did not participate (table 14). This was true for both full- and part-time faculty. However, because average class size was not associated with teaching distance classes (table 11), this difference can be attributed to the number of classes taught and the number of hours spent teaching classes each week. Furthermore, this difference was not found when controlling for other variables such as highest degree attained and institution type.[14]

[14]See the regression analyses in appendix tables C13 and C14.

Instructors of distance classes generally communicated by e-mail with their students to a greater extent than those not involved in distance education (table 15 and figure 9). Full-time instructors of both distance education classes and non–face-to-face classes (78 and 74 percent, respectively) were more likely than their peers who did not teach such classes (about 69 percent each) to communicate with their students via e-mail. Among part-time faculty, this was only true among those who taught non–face-to-face classes.[15] These differences were also found when controlling for other variables associated with teaching distance classes.[16]

Furthermore, among those who did exchange e-mail with their students, full-time faculty who taught distance classes reported a higher percentage of their students sending them e-mail than those not involved in these classes. Among part-time faculty who reported exchanging e-mail with their students, those who taught any non–face-to-face classes also reported a higher percentage of their students e-mailing them than their colleagues teaching only face-to-face classes.

In addition, among instructional faculty and staff who corresponded with students by e-mail, those who participated in distance education spent more time each week doing so. For example, both full- and part-time faculty who taught any classes through distance education programs spent about 4 hours per week responding to student e-mail, while their counterparts who did not teach these classes spent about 2 and one-half hours weekly in this activity.

In summary, for those indicators available in NSOPF:99, instructional faculty and staff who participated in distance education generally appeared to interact with students, or to be available to them, more than their counterparts who were not involved in distance education. On average each week, full-time faculty teaching distance classes held slightly more office hours, had more student contact hours, were more likely to communicate via e-mail with their students, and spent more time responding to student e-mail than their counterparts who were not involved with distance education. Many of these differences were found for part-time faculty as well.

[15]The apparent difference between part-time faculty who taught distance education classes and those who did not was not statistically significant.

[16]See the regression analyses in appendix tables C15 and C16.

Table 15.—Among instructional faculty and staff at degree-granting institutions, extent of e-mail interaction with students, by whether they taught for-credit distance classes and employment status: Fall 1998

Distance teaching	Percent using e-mail to communicate with students	Of those who communicated with students by e-mail:	
		Average percent of students sending e-mail	Hours per week
		Full-time	
Total	69.0	32.9	2.7
Taught any distance education program class[1]			
Yes	78.1	36.2	4.0
No	68.7	32.6	2.6
Taught any primarily non–face-to-face class[2]	74.0	40.8	3.3
Any computer-based class	73.8	44.1	3.4
Any TV-based class	75.6	34.7	3.3
Any class using other primary medium	70.9	36.8	3.2
Did not teach non–face-to-face class	68.7	32.0	2.7
		Part-time	
Total	46.0	32.3	2.7
Taught any distance education program class[1]			
Yes	54.5	40.8	4.2
No	45.9	31.5	2.6
Taught any primarily non–face-to-face class[2]	55.9	40.5	3.9
Any computer-based class	61.6	46.5	4.1
Any TV-based class	38.6	48.1	4.4
Any class using other primary medium	49.8	28.6	3.6
Did not teach non–face-to-face class	45.5	31.2	2.5

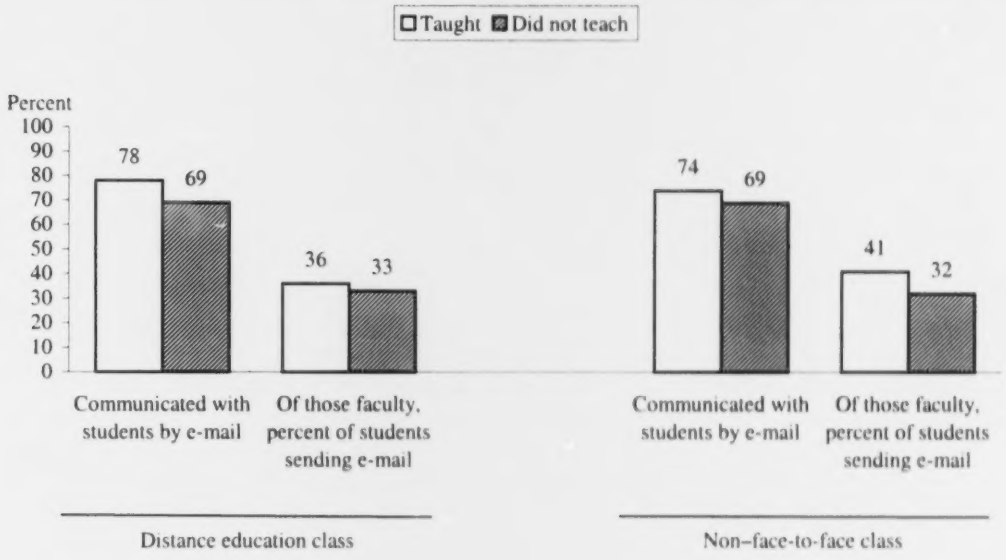
[1]For up to five for-credit classes or sections, respondents were asked to indicate whether the class was taught through a distance education program.

[2]For up to five for-credit classes or sections, respondents were asked to indicate the primary medium used to teach the class. Options were face-to-face, computer, TV-based, or other.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Figure 9.—Percentage of full-time instructional faculty and staff at degree-granting institutions who communicated with students by e-mail, by participation in distance classes: Fall 1998



NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Distance education classes refer to any identified as being taught through a distance education program. Non–face-to-face classes are those taught with a computer, TV-based, or other non–face-to-face primary medium. See the glossary in appendix A for details.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Classroom and Student Practices

Many educators have pointed out that quality education has certain inherent characteristics regardless of the medium of delivery (Schneider 2000; University of Illinois Teaching at a Distance Seminar 1999), yet new technologies are always emerging that expand the tools and practices available to instructors (Carnevale 2000d; Turoff 1999). Instructional faculty and staff were asked in NSOPF:99 about their use of a variety of assessment practices applicable across delivery media as well as use of Web sites for specific classes. The reader is cautioned that respondents were not asked to indicate whether they used various practices for *specific* classes; that is, comparisons were not possible about the use of various tools for distance classes compared with those for traditional classes. However, it was possible to ascertain whether faculty who taught distance classes were any more or less likely to use the methods described.

Instructional faculty and staff were asked whether they used a number of assessment practices—such as student evaluations of each others' work, multiple-choice or essay exams, and

competency-based grading—in none, some, or all of their undergraduate for-credit classes. For this analysis, the latter two categories were combined to show the percentage of faculty who used each assessment tool for any of their classes. For both part- and full-time faculty, those who taught any distance classes were more likely than those not teaching such classes to use multiple-choice midterms or finals in at least some of their for-credit undergraduate classes (not necessarily the distance classes; table 16). About 65 percent of full-time faculty teaching some distance classes used these kinds of assessments, compared with about 55 percent of those who did not teach any distance classes. This may be due to the larger teaching load among those who taught distance classes. Alternatively, faculty who teach distance classes may simply favor different approaches to assessment. Part-time faculty who participated in distance education were more likely than those who taught only traditional classes to report using competency-based grading in some of their for-credit classes.

Full-time faculty teaching through distance education programs were slightly more likely than those who did not teach through such a program to report that they required term or research papers in some of their for-credit classes (68 versus 63 percent). However, this was not the case when comparing those teaching only face-to-face classes with those teaching other types of classes, and this type of assignment was not associated with teaching distance classes among part-time faculty. Apart from these methods, use of other assessment tools was not associated with teaching distance classes.

In NSOPF:99, respondents were asked whether they had Web sites for any of their classes, and if they did, what kinds of information, such as general class information, practice exams or exercises, or links to other information, were posted on them. Instructional faculty and staff who taught distance education classes or non–face-to-face classes were more likely than their colleagues who taught only traditional classes to use Web sites for any of their classes (table 17).[17] Among full-time faculty, about one-half who taught either type of distance class had Web sites for at least some of their classes, compared with about two-fifths of those who did not teach distance classes. Full-time faculty who taught any primarily computer-based classes were particularly likely to use Web sites: about 60 percent of them had class-specific Web sites, compared with 39–45 percent of those who taught any classes using either TV or some other non–face-to-face medium.

When looking only at instructors who did use class-specific Web sites, however, there were fewer differences between those who taught distance classes and those who did not in how these sites were used. Among full-time faculty, those teaching distance classes were somewhat more

[17]These differences persisted even when controlling for other variables. See the regression analyses in appendix tables C17 and C18.

Table 16.—Percentage of instructional faculty and staff at degree-granting institutions using various assessment practices in any for-credit classes, by whether they taught for-credit distance classes and employment status: Fall 1998

Distance teaching	Student evaluations	Multiple-choice mid-terms/ final exams	Essay mid-terms/ final exams	Short-answer mid-terms/ final exams	Term/ research papers	Multiple drafts of written work	Grading on a curve	Competency-based grading
				Full-time				
Total	44.7	56.1	62.3	64.2	63.4	42.1	31.9	60.1
Taught any distance education program class[1]								
Yes	48.4	63.6	64.6	60.9	68.0	41.6	33.9	59.6
No	44.4	55.6	62.2	64.4	63.2	42.1	31.7	60.1
Taught any primarily non–face-to-face class[2]	47.4	64.8	62.6	64.9	65.6	41.7	30.0	64.1
Any computer-based class	46.6	64.9	59.8	68.1	65.6	41.4	31.4	65.4
Any TV-based class	46.7	58.8	69.3	57.2	66.0	39.0	29.1	61.4
Any class using other primary medium	50.6	67.9	62.6	62.3	60.7	43.4	26.2	64.2
Did not teach non–face-to-face class	44.4	55.2	62.3	64.1	63.2	42.1	32.1	59.7
				Part-time				
Total	43.8	58.8	56.4	60.0	55.7	36.0	26.9	61.4
Taught any distance education program class[1]								
Yes	41.4	73.2	61.4	59.0	59.9	39.0	24.8	71.3
No	44.0	57.9	56.1	60.1	55.4	35.8	27.1	60.8
Taught any primarily non–face-to-face class[2]	40.4	73.7	50.6	57.8	50.1	33.0	24.3	72.3
Any computer-based class	37.7	73.7	40.7	56.1	42.5	33.6	21.6	72.7
Any TV-based class	54.2	78.9	59.9	64.1	51.7	46.0	37.0	68.8
Any class using other primary medium	40.5	67.9	58.6	51.6	61.9	28.0	17.2	64.2
Did not teach non–face-to-face class	44.1	57.5	56.9	60.2	56.2	36.3	27.2	60.4

[1]For up to five for-credit classes or sections, respondents were asked to indicate whether the class was taught through a distance education program.

[2]For up to five for-credit classes or sections, respondents were asked to indicate the primary medium used to teach the class. Options were face-to-face, computer, TV-based, or other.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table 17.—Percentage of instructional faculty and staff at degree-granting institutions using class-specific Web sites, and of those, percentage using Web sites to post various items, by whether they taught for-credit distance classes and employment status: Fall 1998

Distance teaching	Total percent using Web sites	Of those using Web sites, percent posting:				
		General class information	Assign-ments	Self-scoring sample tests	Exams or exam results	Links to other information
			Full-time			
Total	40.2	82.0	70.8	25.7	22.2	80.4
Taught any distance education program class[1]						
Yes	52.6	82.5	73.0	32.6	32.1	87.3
No	39.6	82.1	70.8	25.3	21.4	80.1
Taught any primarily non–face-to-face class[2]	50.8	84.6	74.7	30.4	29.0	87.7
Any computer-based class	59.6	86.0	76.1	32.0	28.9	88.0
Any TV-based class	44.8	81.8	70.0	25.8	27.3	86.2
Any class using other primary medium	39.1	75.8	62.6	27.0	29.6	90.0
Did not teach non–face-to-face class	39.3	81.8	70.4	25.2	21.3	79.7
			Part-time			
Total	34.2	77.3	66.2	26.0	24.6	80.7
Taught any distance education program class[1]						
Yes	52.2	67.9	55.5	14.2	31.0	84.2
No	33.2	78.0	67.5	27.4	24.0	80.6
Taught any primarily non–face-to-face class[2]	47.0	71.6	62.8	12.3	28.7	87.5
Any computer-based class	53.2	73.2	67.9	15.1	32.8	84.6
Any TV-based class	53.8	(#)	(#)	(#)	(#)	(#)
Any class using other primary medium	36.4	(#)	(#)	(#)	(#)	(#)
Did not teach non–face-to-face class	33.2	77.8	66.9	28.1	24.0	80.0

#Too small to report.

[1]For up to five for-credit classes or sections, respondents were asked to indicate whether the class was taught through a distance education program.

[2]For up to five for-credit classes or sections, respondents were asked to indicate the primary medium used to teach the class. Options were face-to-face, computer, TV-based, or other.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

likely to use Web sites to post exams or exam results or to post links to other information. Teaching distance classes was not associated with using Web sites to post this information among part-time faculty, however. Instead, part-time instructional faculty and staff teaching distance classes were less likely than others to post practice exams or exercises that provide immediate scoring.

Job Satisfaction and Opinions

If faculty teaching distance classes differ from their colleagues in aspects of their jobs such as workload and time spent with students, they could have a different perspective on their jobs and institutions. However, this does not appear to be the case.

Respondents were asked how satisfied they were with various instructional duties, such as course content, courses taught, time available for class preparation and to spend with students, and workload. The percentage of each group reporting that they were very satisfied with these conditions is shown in table 18. Although instructional faculty and staff teaching distance classes tended to teach more classes and have more course preparations, they were at least as likely, and in some cases *more* likely, to say they were very satisfied with the workload. Among full-time faculty, those who taught non–face-to-face classes were more likely than their counterparts who did not to say they were very satisfied with the workload (35 versus 29 percent). Among part-time faculty, those who taught distance education classes were more likely than those who did not to report that they were very satisfied with the workload (63 versus 50 percent). Apart from these differences, however, teaching distance classes was generally unrelated to satisfaction with instructional duties.

There were a few differences between those who taught distance classes and those who did not in their perceptions about the institutional climate in fall 1998 (table 19). Among full-time faculty, distance educators were slightly more likely to agree that teaching should be the primary criterion used in promotion decisions, and slightly less likely to agree that research should be the primary criterion, compared with their counterparts who taught no distance classes. For example, about 82 percent of distance educators agreed that teaching should be the primary promotion criterion, compared with about 75 percent of others. These differences were not found among part-time faculty. However, among part-time faculty, those who taught any distance classes were more likely to agree that faculty workload has increased in recent years than those who did not teach distance classes (76–79 versus 69 percent).

Table 18.—Percentage of instructional faculty and staff at degree-granting institutions who reported they were very satisfied with various aspects of their jobs, by whether they taught for-credit distance classes and employment status: Fall 1998

Distance teaching	Level of authority about class content	Level of authority about courses taught	Time available for working with students	Time available for class preparation	Workload	Instructional duties overall[1]	Job overall[2]
				Full-time			
Total	79.1	53.7	34.3	33.3	29.0	34.1	14.6
Taught any distance education program class[3]							
Yes	81.2	54.4	38.3	34.7	30.8	37.0	15.1
No	79.1	53.4	34.0	33.4	29.0	33.9	14.5
Taught any primarily non–face-to-face class[4]	78.6	53.2	37.0	32.7	34.5	33.0	17.4
Any computer-based class	77.9	54.7	37.7	33.7	33.7	34.0	17.6
Any TV-based class	82.7	52.9	38.5	33.4	33.9	33.5	18.2
Any class using other primary medium	79.5	55.1	38.9	35.3	40.9	38.1	17.7
Did not teach non–face-to-face class	79.3	53.5	34.0	33.6	28.5	34.2	14.3
				Part-time			
Total	77.0	48.0	42.6	45.7	51.2	44.7	21.1
Taught any distance education program class[3]							
Yes	74.1	59.2	48.5	46.0	63.2	45.3	21.6
No	77.1	47.5	41.9	45.7	49.9	44.6	20.7
Taught any primarily non–face-to-face class[4]	69.4	52.6	40.2	44.3	54.5	38.9	21.3
Any computer-based class	66.9	52.0	41.1	44.7	52.4	34.3	21.9
Any TV-based class	75.2	60.9	57.0	58.4	71.5	45.6	15.7
Any class using other primary medium	68.6	44.8	32.4	37.0	57.0	42.0	23.2
Did not teach non–face-to-face class	77.6	47.8	42.5	45.9	50.3	45.2	20.8

[1]Overall satisfaction with instructional duties was calculated as the average satisfaction with items in the first four columns plus level of authority about other aspects of the job and the quality of undergraduate and graduate students, if applicable.

[2]Overall job satisfaction was calculated as the average satisfaction with seven items including workload, job security, opportunity for advancement, and salary.

[3]For up to five for-credit classes or sections, respondents were asked to indicate whether the class was taught through a distance education program.

[4]For up to five for-credit classes or sections, respondents were asked to indicate the primary medium used to teach the class. Options were face-to-face, computer, TV-based, or other.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Options for rating satisfaction were very dissatisfied, somewhat dissatisfied, somewhat satisfied, and very satisfied.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table 19.—Percentage of instructional faculty and staff agreeing with various statements about the institutional climate, by whether they taught for-credit distance classes and employment status: Fall 1998

Distance teaching	Teaching effectiveness should be primary promotion criterion	Research should be primary promotion criterion	Research is rewarded more than teaching	Faculty workload has increased	Quality of undergraduate education has declined	Too many full-time faculty have been replaced by part-time faculty
			Full-time			
Total	73.9	31.7	46.4	80.6	47.6	55.0
Taught any distance education program class[1]						
Yes	82.2	21.2	42.1	81.1	45.2	56.7
No	75.1	31.1	44.9	79.9	48.2	55.7
Taught any primarily non–face-to-face class[2]	82.1	22.1	38.2	82.2	51.3	57.1
Any computer-based class	81.8	23.6	37.5	81.7	49.4	56.7
Any TV-based class	84.2	20.1	39.2	83.5	55.4	63.7
Any class using other primary medium	81.2	19.9	35.8	83.7	51.8	54.3
Did not teach non–face-to-face class	74.9	31.4	45.4	79.7	47.7	55.7
			Part-time			
Total	92.9	21.5	28.5	69.2	45.8	53.1
Taught any distance education program class[1]						
Yes	96.0	27.3	27.2	79.2	41.0	51.5
No	93.1	20.7	28.1	68.6	45.6	53.3
Taught any primarily non–face-to-face class[2]	94.3	26.0	26.4	75.7	42.3	51.4
Any computer-based class	93.0	27.6	30.3	74.1	37.6	50.5
Any TV-based class	88.9	26.6	23.3	83.4	43.7	50.7
Any class using other primary medium	98.0	23.9	24.8	75.9	52.9	50.8
Did not teach non–face-to-face class	93.1	20.7	28.2	68.6	45.6	53.4

[1]For up to five for-credit classes or sections, respondents were asked to indicate whether the class was taught through a distance education program.

[2]For up to five for-credit classes or sections, respondents were asked to indicate the primary medium used to teach the class. Options were face-to-face, computer, TV-based, or other.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Response options for items included strongly disagree, disagree, agree, and strongly agree. The last two options are combined.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Conclusion

Across the nation, faculty involvement in distance education remained relatively uncommon in fall 1998—6 percent of faculty indicated that they taught at least one class offered through a distance education program, and 9 percent indicated that they taught at least one class that was not primarily a face-to-face class. The rapid evolution of the use of technology, however, may mean that this number has increased since the survey was conducted. Lewis et al. (1999) found rapid change between 1995 and 1997 in offerings at the institutional level, and data from the annual Campus Computing Survey suggest that more and more institutions have added Web-based course offerings since that time (Green 2001). Thus, the fall 1998 data for faculty may serve as a baseline for future studies of faculty participation in this still-growing field. While faculty at public 2-year institutions were more likely to teach distance classes than those at some other types of institutions, in general, few demographic characteristics, conditions of employment, or aspects of education and experience were associated with teaching either type of distance class.

However, those faculty members who did teach distance classes differed from their counterparts in terms of their workload. Faculty and instructional staff who taught distance classes carried larger workloads, teaching more for-credit classes or sections and more course preparations in fall 1998 than their colleagues who were not involved in distance education. These relationships were found for both full- and part-time faculty, and persisted even when controlling for other factors associated with teaching distance classes. Although they taught more classes, faculty teaching distance classes were at least as likely to report being very satisfied with the workload. However, teaching distance classes was not associated with compensation received from the institution.

Faculty who taught distance classes also tended to have more contact with students, particularly using electronic means. Faculty who were involved with distance education communicated with their students via e-mail more than their colleagues and spent more time doing so each week. They were also more likely to use class-specific Web sites. In addition, the quality of institutional computing resources was associated with whether faculty taught any non–face-to-face classes. These results are consistent with the expansion of distance education that takes advantage of recent developments in advanced telecommunications (Phipps and Merisotis 2000; Turoff 1999; University of Illinois Teaching at a Distance Seminar 1999).

References

American Association of University Professors, Special Committee on Distance Education and Intellectual Property Issues. (1999). Distance Education and Intellectual Property. *Academe, 85*(3): 41–45.

American Council on Education. (2000). *Developing a Distance Education Policy for 21st Century Learning*. Washington, DC: Author.

American Federation of Teachers. (2000*). Ensuring High Quality in Distance Education for College Credit*. Resolution passed by the American Federation of Teachers. Washington, DC: Author.

Black, E.J. (1992). Faculty Support for University Distance Education. *CADE: Journal of Distance Education, 7*(2): 5–30.

Carnevale, D. (2000a, September 8). Accrediting Bodies Consider New Standards for Distance Education Programs. *Chronicle of Higher Education, 47*(2): A58.

Carnevale, D. (2000b, May 12). A College's Detailed Policy on Distance Education. *Chronicle of Higher Education, 46*(36): A49.

Carnevale, D. (2000c, July 21). Faculty Union Opposes Undergraduate Degrees Earned Entirely Through Distance Learning. *Chronicle of Higher Education, 46*(46): A32.

Carnevale, D. (2000d, August 4). Turning Traditional Courses Into Distance Education. *Chronicle of Higher Education, 46*(48): A37.

Carnevale, D. (2001, February 23). As Online Education Surges, Some Colleges Remain Untouched. *Chronicle of Higher Education, 47*(24): A41–A42.

Carr, S. (2000a, March 3). Chapman U. Administrator Studies Distance Learning's Effect on Faculty Pay. *Chronicle of Higher Education, 46*(26): A46.

Carr, S. (2000b, July 7). Many Professors Are Optimistic on Distance Learning, Survey Finds. *Chronicle of Higher Education, 46*(44): A35.

Chen, X. (2000). *Instructional Faculty and Staff in Higher Education Institutions Who Taught Classes to Undergraduates: Fall 1992* (NCES 2000–186). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Eamon, D.B. (1999). Distance Education: Has Technology Become a Threat to the Academy? *Behavior Research Methods, Instruments, and Computers, 31*(2): 197–207.

Gladieux, L.E., and Swail, W.S. (1999). *The Virtual University and Educational Opportunity; Issues of Equity and Access for the Next Generation*. Washington, DC: The College Board.

Green, K.C. (2001). *eCommerce Comes Slowly to the Campus*. Encino, CA: The Campus Computing Project. Available: *http://www.campuscomputing.net* [October 29, 2001].

Guernsey, L. (1998, March 27). Colleges Debate the Wisdom of Having On-Campus Students Enroll in On-Line Classes. *Chronicle of Higher Education, 44*(29): A29.

Lewis, L., Snow, K., Farris, E., and Levin, D. (1999). *Distance Education at Postsecondary Education Institutions: 1997–98* (NCES 2000–013). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Lynch, W., and Corry, M. (1998, March 10–14). *Faculty Recruitment, Training, and Compensation for Distance Education.* Paper presented at the Society for Information Technology and Teacher Education, Washington, DC.

Monaghan, P. (1996, March 15). Union Leaders Raise Concerns About Technology for Teaching. *Chronicle of Higher Education, 42*(27): A26–A27.

National Education Association. (2000). *A Survey of Traditional and Distance Learning Higher Education Members.* Washington, DC: Author.

National Education Association. (2001, March). Focus on Distance Education. *NEA Higher Education Research Center Update, 7*(2).

Nettles, M.T., Perna, L.W., and Bradburn, E.M. (2000). *Salary, Promotion, and Tenure Status of Minority and Women Faculty in U.S. Colleges and Universities* (NCES 2000–173). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Oblinger, D.G., Barone, C.A., and Hawkins, B.L. (2001). *Distributed Education and Its Challenges: An Overview*. Washington, DC: American Council on Education and EDUCAUSE.

Phipps, R., and Merisotis, J. (1999). *What's the Difference? A Review of Contemporary Research on the Effectiveness of Distance Learning in Higher Education.* Washington, DC: Institute for Higher Education Policy.

Phipps, R., and Merisotis, J. (2000). *Quality on the Line: Benchmarks for Success in Internet-Based Distance Education.* Washington, DC: Institute for Higher Education Policy.

Schneider, C.G. (2000, April 26). The Age of Virtual Learning? *Education Week, 19*(33): 64.

Sherron, G.T., and Boettcher, J.V. (1997). *Distance Learning: The Shift to Interactivity.* CAUSE Professional Paper Series 17. Boulder, CO: CAUSE.

Turoff, M. (1999, November). *An End to Student Segregation: No More Separation Between Distance Learning and Regular Courses.* Paper presented at the Summary of Invited Plenary for Telelearning 99, Montreal, Canada.

University of Illinois Teaching at a Distance Seminar. (1999). *Teaching at an Internet Distance: The Pedagogy of Online Teaching and Learning.* Unpublished manuscript, University of Illinois.

Young, J.R. (2000, March 31). David Noble's Battle to Defend the 'Sacred Space' of the Classroom. *Chronicle of Higher Education, 46*(30): A47.

Appendix A—Glossary

This glossary describes the variables used in this report. The variables were taken directly from the NSOPF:99 Data Analysis System (DAS), an NCES software application that generates tables from the NSOPF:99 data. A description of the DAS software can be found in appendix B.

In the index below, the variables are organized by general topic and, within topic, listed in the order they appear in the report. The glossary is in alphabetical order by the variable label.

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Academic rank **X01Z8**

Identifies respondents' academic rank, title, or position at their sampled institution or the fact that ranks are not assigned.

Full professor
Associate professor
Assistant professor
Instructor
Lecturer
Other
No rank

Age **X05Z82**

Indicates the respondent's age.

Under 35
35–44
45–54
55–64
65 or older

Average class size: for-credit courses **X61Z41**

Indicates the average class size of for-credit courses, derived by summing the number of students reported for up to five for-credit classes and dividing by the number of such classes.

Average class size: noncredit courses **X62Z41**

Indicates the average class size of noncredit courses, derived by summing the total number of students reported for noncredit classes and dividing by the reported number of such classes.

Average number of noncredit classes taught **X60Z41**

Indicates the number of noncredit classes taught. This is a derived variable calculated by subtracting the number of for-credit classes reported from the total number of classes reported. This analysis looks at the average number of noncredit classes taught.

Basic salary **Q76A**

Faculty response to the question "How much compensation did you receive for your basic salary for the calendar year?" This analysis looks at the average basic salary.

Classes taught for credit **Q40**

Faculty response to the question "How many of the classes/sections that you taught during the 1998 Fall Term were for credit?" This analysis looks at the average number of classes taught for credit.

Course preparations taught **Q34**

Faculty response to the question "How many different courses (preparations) do these classes/sections [identified in Q33] represent?" This analysis looks at the average number of different course preparations.

Distance education class **X09Z41**

See entry for "Taught any distance education class."

Employment intensity **Q5**

Faculty response to the question "During the 1998 Fall Term, did this institution consider you to be employed full-time or part-time?"

Full-time
Part-time

Faculty status **Q4**

Faculty response to the question "During the 1998 Fall Term, did you have faculty status at this institution?"

Yes
No

Faculty workload has increased **Q93B**

Faculty response to the question "Please indicate the extent to which you agree or disagree with the following statement: 'Over recent years at this institution faculty workload has increased.'" This analysis looks at respondents who agreed or strongly agreed.

Gender **Q81**

Faculty response to the question "Are you male or female?"

Male
Female

Highest degree **X01Z16**

Describes the highest degree or award achieved by a respondent.

Doctor's
First-professional
Master's
Bachelor's
Less than bachelor's

Hours per week responding to student e-mail **Q47**

Faculty response to the question "Approximately how many hours per week did you spend responding to student e-mail during the 1998 Fall Term?" This analysis looks at the average number of hours per week.

Institution type **X03Z0**

Indicates the level, highest degree type, and control of the respondent's institution in a modified Carnegie classification scheme. Doctoral institutions include research institutions and medical schools. "Other" includes public liberal arts, private 2-year, religious, and other specialized institutions.

Public doctoral
Private not-for-profit doctoral
Public comprehensive
Private not-for-profit comprehensive
Private not-for-profit liberal arts
Public 2-year
Other

Institution's computing resources **X02Z60**

Indicates respondent's opinion of his or her institution's computing resources. It is the average of the respondent's ratings of the institution's personal computers and local networks, centralized (main frame) computer facilities, Internet connections, and technical support for computer-related activities on a four-point scale.

Poor
Fair
Good
Excellent

Internet access **Q48**

Faculty response to the question "During the 1998 Fall Term, did you have access to the Internet both at home and at work, at work only, at home only, or did you have no Internet access?"

Both at home and at work
At work only
At home only
Neither home nor work

Level of classroom instruction **X06Z41**

Reports a respondent's level of classroom credit instruction, aggregated from reports of the primary level of students in up to five for-credit classes.

Undergraduate only
Both undergraduate and graduate
Graduate only

Non–face-to-face classes **X63Z41**

See entry for "Taught non–face-to-face classes."

Office hours per week **Q51**

Faculty response to the question "During the 1998 Fall Term, how many regularly scheduled office hours did you have per week?" This analysis looks at the average number of office hours per week.

Other income **Q76B**

Faculty response to the question "How much compensation did you receive from other income from this institution not included in basic salary (e.g., for summer session, overload courses, administration, research, coaching sports, etc.)?" This analysis looks at the average compensation from other income.

Percent of for-credit classes through distance education program **X59Z41**

Indicates the percentage of for-credit classes that the respondent taught through a distance education program. This is a derived variable calculated by taking the number of distance education classes and dividing by the total number of for-credit classes taught. This analysis looks at the average percentage.

Percent of students with whom faculty communicated via e-mail **Q46**

Faculty response to the question "Approximately what percent of the students in your classes communicated with you via e-mail during the 1998 Fall Term?" This analysis looks at the average percentage.

Percent of time spent on administration **Q31A5**

Faculty response to the question "What percent of your time do you spend in administration (including departmental or institution-wide meetings or committee work)?" This analysis looks at the average percentage.

Percent of time spent on research **Q31A3**

Faculty response to the question "What percent of your time do you spend in research/scholarship activities (including research; reviewing or preparing articles or books; attending or preparing for professional meetings or conferences; reviewing proposals; seeking outside funding; giving performances or exhibitions in the fine or applied arts; or giving speeches)?" This analysis looks at the average percentage.

Percent of time spent on service/other **X03Z31**

Reports the average percentage of work time respondents spent in activities other than teaching, research, or administration during fall 1998.

Percent of time spent on teaching **X01Z31**

Reports the average percentage of work time respondents spent in teaching during fall 1998.

Quality of undergraduate education has declined **Q93C**

Faculty response to the question "Please indicate the extent to which you agree or disagree with the following statement: 'Over recent years at this institution the quality of undergraduate education has declined.'" This analysis looks at respondents who agreed or strongly agreed.

Race/ethnicity **X04Z84**

This derived variable was created to categorize individuals into one racial/ethnic category. Respondents were asked to pick one or more race categories to identify themselves. The categories were American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; White. There was a separate item that asked about Hispanic or Latino ethnicity. Those individuals who picked more than one race category were coded as "more than one" race/ethnicity, except individuals who only picked Asian and Native Hawaiian or Other Pacific Islander for their race and did not identify themselves as Hispanic origin. They were coded as "Asian and/or Pacific Islander," instead of more than one race/ethnicity. Those individuals who identified themselves as American Indian, Asian, or Native Hawaiian or Other Pacific Islander and of Hispanic origin were coded as "more than one" race/ethnicity. Others who indicated Hispanic ethnicity and only one race were placed in the Hispanic category. The resulting categories are as follows.

White, non-Hispanic
Black/African American, non-Hispanic
Hispanic
Asian and/or Pacific Islander
American Indian or Alaska Native
More than one race

Research is rewarded more than teaching **Q92C**

Faculty response to the question "Please indicate the extent to which you agree or disagree with the following statement: 'At this institution, research is rewarded more than teaching.'" This analysis looks at respondents who agreed or strongly agreed.

Research should be primary promotion criterion **Q92B**

Faculty response to the question "Please indicate the extent to which you agree or disagree with the following statement: 'Research/publications should be the primary criterion for promotion of faculty/instructional staff at this institution.'" This analysis looks at respondents who agreed or strongly agreed.

Satisfaction with instructional duties overall **X01Z65**

Average of the responses on a four-point scale for questions which are concerned with satisfaction with various aspects of instructional duties, including authority about class content, classes taught, and other aspects of the job; time for working with students and for class preparation; and the quality of undergraduate and graduate students. This analysis looks at respondents who were very satisfied.

Satisfaction with job overall **X01Z66**

Average of the responses on a four-point scale for questions which are concerned with satisfaction with various aspects of the respondents job at the sampled institution including work load, job security, opportunity for advancement, and salary. This analysis looks at respondents who were very satisfied.

Satisfaction with level of authority about class content **Q65A**

Faculty response to the question "How satisfied are you with the authority you have to make decisions about the content and methods in the courses you teach?" This analysis looks at respondents who were very satisfied.

Satisfaction with level of authority about courses taught **Q65B**

Faculty response to the question "How satisfied are you with the authority you have to make decisions about what courses you teach?" This analysis looks at respondents who were very satisfied.

Satisfaction with time available for class preparation **Q65E**

Faculty response to the question "How satisfied are you with the time available for class preparation?" This analysis looks at respondents who were very satisfied.

Satisfaction with time available for working with students **Q65D**

Faculty response to the question "How satisfied are you with the time available for working with students as an advisor, mentor, etc.?" This analysis looks at respondents who were very satisfied.

Satisfaction with workload **Q66A**

Faculty response to the question "How satisfied are you with your workload?" This analysis looks at respondents who were very satisfied.

Student contact hours per week **X02Z41**

Provides a calculation of the total student contact hours per week as follows: the hours per week spent teaching a given class multiplied by the number of students in the class, summed for up to five for-credit classes for which the respondent was asked to provide information. This analysis looks at the average number of student contact hours per week.

Taught any distance education class/Number of distance education classes taught **X09Z41**

This variable reports the total number of distance education classes taught for credit. It was derived based on information reported for each of up to five for-credit classes in response to the question, "Was this class taught through a distance education program?" No definition for the term "distance education program" was provided. This analysis considers both whether any such classes were taught (values other than zero) and, for those who did teach any distance education classes, the average number of these classes taught.

Taught computer-based classes **X43Z41**

Indicates whether respondent taught one or more classes in which the primary medium used was the computer. This analysis looks at respondents who did so.

Taught non–face-to-face classes **X63Z41**

This variable reports whether the respondent taught any non–face-to-face classes. It was derived based on information reported for each of up to five for-credit classes indicating the "primary medium used" to teach the class. Response options of face-to-face, computer, TV-based, and other were provided. No definition for the term "primary medium" and no examples of the response options were provided. Respondents who indicated a primary medium of computer, TV-based, or other for any of their classes were considered to teach a non–face-to-face class.

Taught other primary medium classes **X45Z41**

Indicates whether respondent taught one or more classes that used a primary medium other than face-to-face, computer, or TV. This analysis looks at respondents who did so.

Taught TV-based classes **X44Z41**

Indicates whether respondent taught one or more classes in which the primary medium used was the TV. This analysis looks at respondents who did so.

Teaching discipline **X10Z14**

Classifies the general program area of the respondent's principal field of teaching, based on faculty response to the question "What is your principal field or discipline of teaching?" Original responses were aggregated into the following categories for this variable:

Business
Education
Engineering/computer science
Fine arts
Health sciences
Human services
Humanities
Life sciences
Natural/physical sciences and math
Social sciences
Vocational

Teaching effectiveness should be primary promotion criterion **Q92A**

Faculty response to the question "Please indicate the extent to which you agree or disagree with the following statement: 'Teaching effectiveness should be the primary criterion for promotion of faculty/instructional staff at this institution.'" This analysis looks at respondents who agreed or strongly agreed.

Tenure status **Q10**

Faculty response to the question "What was your tenure status at this institution during the 1998 Fall Term?"

Tenured
Tenured-track
Non–tenure-track
No tenure system

Too many full-time faculty have been replaced by part-time faculty **Q93F**

Faculty response to the question "Please indicate the extent to which you agree or disagree with the following statement: 'Over recent years at this institution too many full-time faculty have been replaced by part-time faculty.'" This analysis looks at respondents who agreed or strongly agreed.

Total classes taught **Q33**

Faculty response to the question "During the 1998 Fall Term, what was the total number of classes or sections you taught at this institution?" This analysis looks at the average number of classes taught.

Total FTE enrollment **X25Z0**

Provides the total full-time-equivalent (FTE) student enrollment at the institution.

1,500 or below
1,501–6,000
6,001–12,000
12,001–24,000
More than 24,000

Type of appointment **X01Z12**

Indicates the type of appointment held by a respondent at his or her institution in fall 1998. Temporary appointments include acting, affiliate or adjunct, and visiting appointments.

Regular
Temporary

Used competency-based grading **Q42H**

Faculty response to the question "In how many of the undergraduate courses that you taught for credit during the 1998 Fall Term did you use competency-based grading?" This analysis looks at respondents who used competency-based grading in some or all of such courses.

Used course-specific Web sites **Q43**

Faculty response to the question "During the 1998 Fall Term, did you have websites for any of the classes you taught?" For this analysis, only responses of "Yes" were considered.

Used e-mail to communicate with students **Q45**

Faculty response to the question "During the 1998 Fall Term, did you use electronic mail (e-mail) to communicate with students in your classes?" For this analysis, only responses of "Yes" were considered.

Used essay midterms/final exams **Q42C**

Faculty response to the question "In how many of the undergraduate courses that you taught for credit during the 1998 Fall Term did you use essay midterm and/or final exams?" This analysis looks at respondents who used essay midterms/final exams in some or all of such courses.

Used grading on a curve **Q42G**

Faculty response to the question "In how many of the undergraduate courses that you taught for credit during the 1998 Fall Term did you use grading on a curve?" This analysis looks at respondents who used grading on a curve in some or all of such courses.

Used multiple choice midterms/final exams **Q42B**

Faculty response to the question "In how many of the undergraduate courses that you taught for credit during the 1998 Fall Term did you use multiple-choice midterm and/or final exam?" This analysis looks at respondents who used multiple-choice midterms/final exams in some or all of such courses.

Used multiple drafts of written work **Q42F**

Faculty response to the question "In how many of the undergraduate courses that you taught for credit during the 1998 Fall Term did you use multiple drafts of written work?" This analysis looks at respondents who used multiple drafts of written work in some or all of such courses.

Used short answer midterms/final exams **Q42D**

Faculty response to the question "In how many of the undergraduate courses that you taught for credit during the 1998 Fall Term did you use short-answer midterm and/or final exams?" This analysis looks at respondents who used short answer midterms/final exams in some or all of such courses.

Used student evaluations **Q42A**

Faculty response to the question "In how many of the undergraduate courses that you taught for credit during the 1998 Fall Term did you use student evaluations of each other's work?" This analysis looks at respondents who used student evaluations in some or all of such courses.

Used term/research papers **Q42E**

Faculty response to the question "In how many of the undergraduate courses that you taught for credit during the 1998 Fall Term did you use term or research papers?" This analysis looks at respondents who used term/research papers in some or all of such courses.

Used Web site to post assignments **Q44B**

Faculty response to the question "Did you use the websites to post information on homework assignments or readings?" For this analysis, only responses of "Yes" were considered.

Used Web site to post exams or exam results **Q44D**

Faculty response to the question "Did you use the websites to post exams or exam results?" For this analysis, only responses of "Yes" were considered.

Used Web site to post general class information **Q44A**

Faculty response to the question "Did you use the websites to post general classroom information, such as the syllabus and office hours?" For this analysis, only responses of "Yes" were considered.

Used Web site to post links to other information **Q44E**

Faculty response to the question "Did you use the websites to provide links to other information?" For this analysis, only responses of "Yes" were considered.

Used Web site to post self-scoring sample tests **Q44C**

Faculty response to the question "Did you use the websites to post practice exams or exercises that provide immediate scoring?" For this analysis, only responses of "Yes" were considered.

Years in current job **X01Z7**

Indicates the number of years a respondent has been at the position held during fall 1998 at their sampled institution.

Less than 3
3–5
6–10
11–20
More than 20

Years in higher education **Q25**

Faculty response to the question "How many years have you been teaching in higher education institutions?"

Less than 3
3–5
6–10
11–20
More than 20

Years since highest degree **X16Z16**

Categorizes the number of years since the respondent attained his or her highest degree.

Less than 5
5–9
10–14
15–19
20 or more

Appendix B—Technical Notes

The 1999 National Study of Postsecondary Faculty (NSOPF:99)

The 1999 National Study of Postsecondary Faculty (NSOPF:99) was sponsored by the U.S. Department of Education's National Center for Education Statistics (NCES). The Gallup Organization conducted the third cycle of NSOPF, which included 960 degree-granting postsecondary institutions and an initial sample of 28,704 faculty and instructional staff from these institutions. NSOPF:99 was designed to provide a national profile of faculty, including their professional backgrounds, responsibilities, workloads, salaries, benefits, and attitudes. This third cycle followed the first NSOPF, conducted in 1987–88 with a sample of 480 institutions (including 2-year, 4-year, doctorate-granting, and other colleges and universities), more than 3,000 department chairpersons, and more than 11,000 faculty, and the 1992–93 NSOPF, with a sample of 974 public and private not-for-profit degree-granting postsecondary institutions and 31,354 faculty and instructional staff. Additional information on the first two cycles of NSOPF is available at the NCES Web Site (http://nces.ed.gov/surveys/nsopf/).

A two-stage stratified, clustered probability design was used to select the NSOPF:99 sample. The institution universe for NSOPF:99 was defined by the following criteria: degree-granting institutions participating in Title IV programs;[18] public and private not-for-profit institutions;[19] institutions that conferred associate, bachelor's, or advanced degrees; and institutions that were located in the United States. This definition covered most colleges (including junior and community colleges), universities, and graduate and professional schools. It excluded institutions that either offered only less-than-2-year programs; were private for-profit; or were located outside the United States (e.g., in U.S. territories). In addition, it excluded institutions that offered instruction only to employees of the institutions, tribal colleges, and institutions that offered only correspondence courses. According to the NCES Integrated Postsecondary Education Data System (IPEDS), 3,396 institutions met these criteria and were eligible for the NSOPF:99 sample. The first-stage sampling frame consisted of this group of institutions, stratified based on the

[18]Earlier rounds of NSOPF selected institutions that the U.S. Department of Education (ED) recognized as accredited. However, ED no longer distinguishes among institutions based on accreditation level. As a result, NCES now subdivides the postsecondary institution universe into schools that have Title IV participation agreements for federal financial assistance and those that do not.

[19]Private for-profit institutions are not included even though they may be Title IV degree-granting institutions.

highest degrees offered and the amount of federal research dollars received. The strata distinguished public and private institutions, as well as several types of institutions based on the Carnegie Foundation's classification system.[20]

Each institution was asked to complete an Institution Questionnaire and to provide a list of all faculty and instructional staff at their institution. Unlike NSOPF:88, which was limited to faculty whose assignment included instruction, the faculty universes for NSOPF:93 and NSOPF:99 were expanded to include all those who were designated as faculty, whether their responsibilities included instruction, and other (nonfaculty) personnel with instructional responsibilities. Teaching assistants were not included in any cycle of NSOPF. Institution coordinators were asked to provide a list of these full- and part-time faculty and instructional staff who had faculty status or instructional responsibilities during the 1998 fall term (i.e., the term which included November 1, 1998).

Of the 960 institutions in the sample, one was ineligible because it had merged with another institution. A total of 818 institutions provided lists of faculty and instructional staff, for a weighted list participation rate of 88.4 percent. A total of 865 institutions returned the institution questionnaire, for a weighted response rate of 92.8 percent. Initially, 28,576 faculty and instructional staff were selected from institutions that provided a list of their faculty and instructional staff. Subsequently, a subsample of 19,813 faculty and instructional staff was drawn for intensive follow-up. Approximately 18,000 faculty and instructional staff questionnaires were completed, for a weighted response rate of 83.0 percent. The overall weighted faculty response rate (institution list participation rate multiplied by the faculty questionnaire response rate) was 73.4 percent.

Faculty nonresponse bias analyses indicated no significant bias. Item nonresponse occurred when a respondent did not answer one or more survey questions. The item nonresponse rates were generally low for the faculty questionnaire. For more information about NSOPF:99, including a full description of faculty and item nonresponse, see the *1999 National Study of Postsecondary Faculty: Methodology Report* (NCES 2002–154).

Accuracy of Estimates

The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors occur because observations are made only on samples of populations rather than entire populations. Nonsampling errors occur not only in sample surveys but also in complete censuses of entire populations.

[20]See *A Classification of Institutions of Higher Education*, The Carnegie Foundation for the Advancement of Teaching (Princeton, New Jersey, 1994).

Non-sampling errors can be attributed to a number of sources: inability to obtain complete information about all sample members (e.g., some faculty or institutions refused to participate, or faculty participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and imputing missing data. In addition, some items may be subject to more variation over time. The *1993 National Study of Postsecondary Faculty (NSOPF-93): Methodology Report* (NCES 97–467) included an analysis of the reinterview reliability for selected items such as those indicating the percentage of their work time that respondents allocated to various activities. These items were revised for NSOPF:99.

Data Analysis System

The estimates presented in this report were produced using the NSOPF:99 Data Analysis System (DAS). The DAS software makes it possible for users to specify and generate their own tables from the NSOPF:99 data. With the DAS, users can replicate or expand upon the tables presented in this report. In addition to the table estimates, the DAS calculates proper standard errors[21] and weighted sample sizes for these estimates. For example, table B1 contains standard errors that correspond to table 3 in the essay of this report, and was generated by the DAS. If the number of valid cases is too small to produce a reliable estimate (less than 30 cases), the DAS prints the message "low-N" instead of the estimate.

In addition to tables, the DAS will also produce a correlation matrix of selected variables to be used for linear regression models. Included in the output with the correlation matrix are the design effects (DEFTs) for each variable in the matrix. Since statistical procedures generally compute regression coefficients based on simple random sample assumptions, the standard errors must be adjusted with the design effects to take into account the NSOPF:99 stratified sampling method.

[21]The NSOPF:99 samples are not simple random samples and, therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. The DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by the DAS involves approximating the estimator by the linear terms of a Taylor series expansion. The procedure is typically referred to as the Taylor series method.

Table B1.—Standard errors for table 3: Among instructional faculty and staff at degree-granting institutions, percentage teaching distance education classes for credit, and number and percentage of such classes taught, by education and experience: Fall 1998

Characteristic	Percent teaching distance education class	Of those teaching a distance education class:	
		Number of distance education classes	Percent of for-credit classes taught through distance education program
Total	0.40	0.04	2.33
Highest degree			
Doctor's	0.34	0.05	2.18
First-professional	1.56	0.24	8.97
Master's	0.77	0.06	3.71
Bachelor's	0.98	0.14	8.70
Less than bachelor's	1.08	(#)	(#)
Years since highest degree			
Less than 5	1.13	0.10	4.42
5–9	0.70	0.09	4.79
10–14	0.86	0.07	5.66
15–19	0.57	0.09	3.36
20 or more	0.50	0.08	3.24
Years in current job			
Less than 3	0.87	0.09	4.87
3–5	0.66	0.10	4.32
6–10	0.63	0.09	3.55
11–20	0.69	0.06	4.67
More than 20	0.74	0.14	5.34
Years in higher education			
Less than 3	1.57	0.11	6.99
3–5	0.75	0.11	5.12
6–10	0.51	0.09	3.04
11–20	0.62	0.05	4.31
More than 20	0.60	0.10	3.71

#Too small to report.

NOTE: Includes all instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Based on reports of whether up to five for-credit classes were identified as being taught through a distance education program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

The DAS can be accessed electronically at http://nces.ed.gov/DAS. For more information about the NSOPF:99 Data Analysis System, contact:

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Statistical Procedures

Differences Between Means

The descriptive comparisons were tested in this report using Student's *t* statistic. Differences between estimates are tested against the probability of a Type I error,[22] or significance level. The significance levels were determined by calculating the Student's *t* values for the differences between each pair of means or proportions and comparing these with published tables of significance levels for two-tailed hypothesis testing.

Student's *t* values may be computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}} \qquad (1)$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. This formula is valid only for independent estimates. When estimates are not independent, a covariance term must be added to the formula:

$$\frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2 - 2(r)se_1\ se_2}} \qquad (2)$$

where r is the correlation between the two variables.[23] The denominator in this formula will be at its maximum when the two estimates are perfectly negatively correlated, that is, when $r = -1$.

[22]A Type I error occurs when one concludes that a difference observed in a sample reflects a true difference in the population from which the sample was drawn, when no such difference is present.

[23]U.S. Department of Education, National Center for Education Statistics, *A Note from the Chief Statistician*, no. 2, 1993.

This means that a conservative dependent test may be conducted by using –1 for the correlation in this formula, or

$$t = \frac{E_1 - E_2}{\sqrt{(se_1)^2 + (se_2)^2 + 2se_1 se_2}}. \qquad (3)$$

The estimates and standard errors are obtained from the DAS.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large *t* statistics may appear to merit special attention. This can be misleading since the magnitude of the *t* statistic is related not only to the observed differences in means or percentages but also to the number of respondents in the specific categories used for comparison. Hence, a small difference compared across a large number of respondents would produce a large *t* statistic.

A second hazard in reporting statistical tests for each comparison occurs when making multiple comparisons among categories of an independent variable. For example, when making paired comparisons among different levels of income, the probability of a Type I error for these comparisons taken as a group is larger than the probability for a single comparison. When more than one difference between groups of related characteristics or "families" are tested for statistical significance, one must apply a standard that assures a level of significance for all of those comparisons taken together.

Comparisons were made in this report only when $p \leq .05/k$ for a particular pairwise comparison, where that comparison was one of *k* tests within a family. This guarantees both that the individual comparison would have $p \leq .05$ and that for *k* comparisons within a family of possible comparisons, the significance level for all the comparisons will sum to $p \leq .05$.[24]

For example, in a comparison of the percentages of males and females with tenure, only one comparison is possible (males versus females). In this family, $k=1$, and the comparison can be evaluated without adjusting the significance level. When respondents are divided into five racial/ethnic groups and all possible comparisons are made, then $k=10$ and the significance level of each test must be $p \leq .05/10$, or $p \leq .005$. The formula for calculating family size (*k*) is as follows:

$$k = \frac{j(j-1)}{2} \qquad (4)$$

[24]The standard that $p \leq .05/k$ for each comparison is more stringent than the criterion that the significance level of the comparisons should sum to $p \leq .05$. For tables showing the *t* statistic required to ensure that $p \leq .05/k$ for a particular family size and degrees of freedom, see Olive Jean Dunn, "Multiple Comparisons Among Means," *Journal of the American Statistical Association* 56 (1961): 52–64.

where j is the number of categories for the variable being tested. In the case of race/ethnicity, there are six racial/ethnic groups (American Indian/Alaskan Native; Asian/Pacific Islander; Black, non-Hispanic; Hispanic; White, non-Hispanic; and More than one race), so substituting 6 for j in equation 4,

$$k = \frac{6(6-1)}{2} = 15$$

Linear Trends

While many descriptive comparisons in this report were tested using Student's t statistic, some comparisons among categories of an ordered variable with three or more levels involved a test for a linear trend across all categories, rather than a series of tests between pairs of categories. In this report, when differences among percentages were examined relative to a variable with ordered categories, Analysis of Variance (ANOVA) was used to test for a linear relationship between the two variables. To do this, ANOVA models included orthogonal linear contrasts corresponding to successive levels of the independent variable. The squares of the Taylorized standard errors (that is, standard errors that were calculated by the Taylor series method), the variance between the means, and the unweighted sample sizes were used to partition total sum of squares into within- and between-group sums of squares. These were used to create mean squares for the within- and between-group variance components and their corresponding F statistics, which were then compared with published values of F for a significance level of .05.[25] Significant values of both the overall F and the F associated with the linear contrast term were required as evidence of a linear relationship between the two variables. Means and Taylorized standard errors were calculated by the DAS. Unweighted sample sizes are not available from the DAS and were provided by NCES.

Adjustment of Means to Control for Background Variation

Many of the independent variables included in the analyses in this report are related, and to some extent the pattern of differences found in the descriptive analyses reflect this covariation. For example, when examining the percentage of the faculty who taught distance classes by instructional level, it is possible that some of the observed relationship is due to differences in other factors related to instructional level, such as institution type, institution size, and so on. However, if nested tables were used to isolate the influence of these other factors, cell sizes

[25]More information about ANOVA and significance testing using the F statistic can be found in any standard textbook on statistical methods in the social and behavioral sciences.

would become too small to identify the significant differences in patterns. When the sample size becomes too small to support controls for another level of variation, one must use other methods to take such variation into account. The method used in this report estimates adjusted means with regression models, an approach sometimes referred to as communality analysis.

To overcome this difficulty for the analysis of the percentage of faculty teaching distance classes as well as additional analyses included in appendix C, multiple linear regression was used to obtain means that were adjusted for covariation among a list of control variables.[26] Each independent variable is divided into several discrete categories. To find an estimated mean value on the dependent variable for each category of an independent variable, while adjusting for its covariation with other independent variables in the equation, substitute the following in the equation: (1) a one in the category's term in the equation, (2) zeroes for the other categories of this variable, and (3) the mean proportions for all other independent variables. This procedure holds the impact of all remaining independent variables constant, and differences between adjusted means of categories of an independent variable represent hypothetical groups that are balanced or proportionately equal on all other characteristics included in the model as independent variables.

For example, consider a hypothetical case in which two variables, age and gender, are used to describe an outcome, Y (such as percentage of respondents teaching distance classes). The variables age and gender are recoded into a dummy variable representing age, A, and a dummy variable representing gender, G:

Age	A
Less than 35 years old	1
35 years or older	0
and	
Gender	G
Female	1
Male	0

The following regression equation is then estimated from the correlation matrix output from the DAS as input data for standard regression procedures:

$$\hat{Y} = a + b_1 A + b_2 G \qquad (5)$$

To estimate the adjusted mean for any subgroup evaluated at the mean of all other variables, one substitutes the appropriate values for that subgroup's dummy variables (1 or 0) and the

[26]For more information about least squares regression, see Michael S. Lewis-Beck, *Applied Regression: An Introduction*, Vol. 22 (Beverly Hills, CA: Sage Publications, Inc., 1980); William D. Berry and Stanley Feldman, *Multiple Regression in Practice*, Vol. 50 (Beverly Hills, CA: Sage Publications, Inc., 1987).

mean for the dummy variable(s) representing all other subgroups. For example, suppose Y represents the proportion of faculty teaching distance classes, which is being described by age (A) and gender (G), coded as shown above. Suppose the unadjusted mean values of these two variables are as follows:

Variable	Mean
A	0.355
G	0.411

Next, suppose the regression equation results are as follows:

$$\hat{Y} = 0.51 - 0.17A - 0.21G \tag{6}$$

To estimate the adjusted value for younger faculty, one substitutes the appropriate parameter estimates and variable values into equation 6.

Variable	Parameter	Value
a	0.51	—
A	-0.17	1.000
G	-0.21	0.411

This results in the following equation:

$$\hat{Y} = 0.51 - (0.17)(1) - (0.21)(0.411) = 0.254$$

In this case, the adjusted mean for younger faculty is 0.254 and represents the expected outcome for younger faculty who resemble the average faculty member across the other variables (in this example, gender). In other words, the adjusted percentage of younger faculty teaching distance classes, controlling for gender, is 25.4 percent (0.254 x 100 for conversion to a percentage).

It is relatively straightforward to produce a multivariate model using the DAS, since one of the DAS output options is a correlation matrix, computed using pairwise missing values. In regression analysis, there are several common approaches to the problem of missing data. The two simplest are pairwise deletion of missing data and listwise deletion of missing data. In pairwise deletion, each correlation is calculated using all of the cases for the two relevant variables. For example, suppose you have a regression analysis that uses variables X1, X2, and X3. The regression is based on the correlation matrix between X1, X2, and X3. In pairwise deletion the correlation between X1 and X2 is based on the nonmissing cases for X1 and X2. Cases missing on either X1 or X2 would be excluded from the calculation of the correlation. In listwise deletion the correlation between X1 and X2 would be based on the nonmissing values for X1, X2, and

X3. That is, all of the cases with missing data on any of the three variables would be excluded from the analysis.

The correlation matrix can be used by most statistical software packages as the input data for least squares regression. That is the approach used for this report, with an additional adjustment to incorporate the complex sample design into the statistical significance tests of the parameter estimates (described below). For tabular presentation, parameter estimates and standard errors were multiplied by 100 to match the scale used for reporting unadjusted and adjusted percentages.

Although the DAS simplifies the process of making regression models, it also limits the range of models. The means adjustment procedure used here relies on a least squares regression model, which is sometimes sufficient for binary outcomes (such as the outcomes studied here, the percentage of faculty teaching distance classes). However, when the proportion of the sample participating in the outcome is very low or very high, logit or probit models are preferred.[27] Because the outcomes of interest—teaching a distance education class or a non–face-to-face class—were relatively uncommon, a logit analysis was also performed on the restricted use data using the SUDAAN software program; variance estimation in SUDAAN is accomplished by the Taylor series method using information about the stratum and primary sampling unit of each case, available in the restricted use dataset. The logit analysis exhibited similar patterns to the results shown in this report.

Most statistical software packages assume simple random sampling when computing standard errors of parameter estimates. Because of the complex sampling design used for the NSOPF survey, this assumption is incorrect. A better approximation of their standard errors is to multiply each standard error by the design effect associated with the dependent variable (DEFT),[28] where the DEFT is the ratio of the true standard error to the standard error computed under the assumption of simple random sampling. It is calculated by the DAS and produced with the correlation matrix output.

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[27]See John H. Aldrich and Forrest D. Nelson, "Linear Probability, Logit and Probit Models" (*Quantitative Applications in Social Sciences*, Vol. 45) (Beverly Hills, CA: Sage, 1984). Analysts who wish to estimate other types of models can apply for a restricted data license from NCES.

[28]The adjustment procedure and its limitations are described in C.J. Skinner, D. Holt, and T.M.F. Smith, eds., *Analysis of Complex Surveys* (New York: John Wiley & Sons, 1989).

Appendix C—Supplemental Tables

Table C1.—Number of for-credit classes taught by instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted number after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	2.89	2.89	4.07	0.52
Gender				
Male	*2.93*	*2.92*	†	†
Female	2.84	2.85	-0.08	0.14
Employment intensity				
Full-time	*3.39*	*3.48*	†	†
Part-time	2.24*	2.10*	-1.39	0.15
Teaching discipline				
Business	3.14	2.95	0.24	0.32
Education	2.82	2.89	0.18	0.33
Engineering/computer science	*2.81*	*2.71*	†	†
Fine arts	3.16	3.25	0.54	0.33
Health sciences	2.90	2.92	0.20	0.31
Human services	3.08	3.12	0.41	0.37
Humanities	2.85	2.87	0.15	0.28
Life sciences	3.01	2.99	0.27	0.35
Natural/physical sciences and math	2.62	2.55	-0.16	0.31
Social sciences	2.72	2.80	0.09	0.29
Vocational	3.40	3.18	0.47	0.40
Level of classroom instruction[6]				
Undergraduate only	2.98*	2.91*	-0.71	0.22
Both undergraduate and graduate	*3.69*	*3.61*	†	†
Graduate only	2.17*	2.28*	-1.33	0.26
Highest degree				
Doctor's	*2.83*	*2.67*	†	†
First-professional	2.83	3.21*	0.55	0.27
Master's	2.96	3.02*	0.36	0.17
Bachelor's	2.88	3.04	0.37	0.28
Less than bachelor's	2.99	2.89	0.22	0.44
Internet access				
Both at home and at work	*2.97*	*2.95*	†	†
At work only	3.08	2.95	0.00	0.15
At home only	2.30*	2.62	-0.33	0.22
Neither home nor work	2.60*	2.73	-0.22	0.27

See footnotes at end of table.

Table C1.—Number of for-credit classes taught by instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted number after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*2.57*	*2.88*	†	†
Fair	2.96*	2.95	0.07	0.30
Good	2.92*	2.84	-0.04	0.29
Excellent	3.10*	2.94	0.06	0.30
Institution type				
Public doctoral	2.63*	2.54*	-0.81	0.26
Private not-for-profit doctoral	2.40*	2.52*	-0.84	0.29
Public comprehensive	2.97	2.87*	-0.48	0.23
Private not-for-profit comprehensive	2.86	2.85	-0.51	0.28
Private not-for-profit liberal arts	3.00	2.88	-0.48	0.28
Public 2-year	*3.19*	*3.36*	†	†
Other[8]	2.95	2.97	-0.39	0.30
Total FTE enrollment				
1,500 or less	2.99*	3.02	0.34	0.34
1,501-6,000	3.07*	2.98	0.30	0.30
6,001-12,000	2.87*	2.86	0.18	0.29
12,001-24,000	2.64	2.77	0.08	0.26
More than 24,000	*2.44*	*2.69*	†	†
Taught distance education class				
No	*2.87*	*2.83*	†	†
Yes	4.09*	3.87*	1.03	0.27

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C2.—Number of for-credit classes taught by instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted number after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	2.89	2.89	4.02	0.52
Gender				
Male	*2.93*	*2.93*	†	†
Female	2.84	2.85	-0.08	0.14
Employment intensity				
Full-time	*3.39*	*3.48*	†	†
Part-time	2.24*	2.11*	-1.37	0.15
Teaching discipline				
Business	3.14	2.95	0.31	0.32
Education	2.82	2.88	0.24	0.33
Engineering/computer science	*2.81*	*2.65*	†	†
Fine arts	3.16	3.25	0.60	0.33
Health sciences	2.90	2.92	0.27	0.31
Human services	3.08	3.14	0.50	0.37
Humanities	2.85	2.88	0.24	0.28
Life sciences	3.01	2.98	0.34	0.35
Natural/physical sciences and math	2.62	2.56	-0.08	0.31
Social sciences	2.72	2.82	0.17	0.29
Vocational	3.40	3.18	0.54	0.40
Level of classroom instruction[6]				
Undergraduate only	2.98*	2.90*	-0.73	0.22
Both undergraduate and graduate	*3.69*	*3.63*	†	†
Graduate only	2.17*	2.29*	-1.34	0.26
Highest degree				
Doctor's	*2.83*	*2.68*	†	†
First-professional	2.83	3.21*	0.53	0.27
Master's	2.96	3.02*	0.35	0.17
Bachelor's	2.88	3.01	0.34	0.28
Less than bachelor's	2.99	2.87	0.20	0.44
Internet access				
Both at home and at work	*2.97*	*2.94*	†	†
At work only	3.08	2.96	0.01	0.15
At home only	2.3*	2.61	-0.34	0.22
Neither home nor work	2.6*	2.76	-0.18	0.27

See footnotes at end of table.

Table C2.—Number of for-credit classes taught by instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted number after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*2.57*	*2.90*	†	†
Fair	2.96*	2.94	0.04	0.30
Good	2.92*	2.84	-0.06	0.29
Excellent	3.1*	2.94	0.04	0.30
Institution type				
Public doctoral	2.63*	2.55*	-0.80	0.26
Private not-for-profit doctoral	2.4*	2.52*	-0.84	0.29
Public comprehensive	2.97	2.87*	-0.48	0.23
Private not-for-profit comprehensive	2.86	2.84	-0.51	0.28
Private not-for-profit liberal arts	3.00	2.89	-0.47	0.28
Public 2-year	*3.19*	*3.35*	†	†
Other[8]	2.95	2.96	-0.40	0.30
Total FTE enrollment				
1,500 or less	2.99*	3.01	0.33	0.34
1,501-6,000	3.07*	2.98	0.29	0.30
6,001-12,000	2.87*	2.87	0.18	0.29
12,001-24,000	2.64	2.76	0.07	0.26
More than 24,000	*2.44*	*2.69*	†	†
Primary medium non-face-to-face				
Yes	3.91*	3.68*	0.86	0.23
No	*2.84*	*2.82*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C3.—Number of course preparations taught by instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted number after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	2.12	2.12	2.99	0.24
Gender				
Male	*2.14*	*2.12*	†	†
Female	2.09	2.12	0.00	0.06
Employment intensity				
Full-time	*2.55*	*2.61*	†	†
Part-time	1.56*	1.46*	-1.16	0.07
Teaching discipline				
Business	2.26	2.17	0.04	0.15
Education	2.07	2.09	-0.05	0.15
Engineering/computer science	*2.15*	*2.13*	†	†
Fine arts	2.38	2.48*	0.35	0.15
Health sciences	2.02	2.03	-0.10	0.14
Human services	2.25	2.27	0.13	0.17
Humanities	2.11	2.12	-0.01	0.13
Life sciences	2.07	1.96	-0.18	0.16
Natural/physical sciences and math	2.05	2.00	-0.13	0.14
Social sciences	1.98	2.02	-0.11	0.13
Vocational	2.47	2.34	0.21	0.18
Level of classroom instruction[6]				
Undergraduate only	2.15*	2.11*	-0.35	0.10
Both undergraduate and graduate	*2.55*	*2.46*	†	†
Graduate only	1.73*	1.88*	-0.58	0.12
Highest degree				
Doctor's	*2.19*	*2.05*	†	†
First-professional	1.93*	2.24	0.19	0.12
Master's	2.10	2.15	0.10	0.08
Bachelor's	1.96*	2.10	0.05	0.13
Less than bachelor's	2.38	2.37	0.32	0.20
Internet access				
Both at home and at work	*2.16*	*2.13*	†	†
At work only	2.29*	2.17	0.04	0.07
At home only	1.73*	2.03	-0.10	0.10
Neither home nor work	1.82*	1.99	-0.14	0.12

See footnotes at end of table.

Table C3.—Number of course preparations taught by instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted number after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*1.81*	*2.04*	†	†
Fair	2.20*	2.19	0.14	0.14
Good	2.19*	2.11	0.07	0.13
Excellent	2.20*	2.10	0.05	0.14
Institution type				
Public doctoral	1.95*	1.84*	-0.60	0.12
Private not-for-profit doctoral	1.76*	1.80*	-0.64	0.13
Public comprehensive	2.23	2.16*	-0.28	0.11
Private not-for-profit comprehensive	2.08	2.09*	-0.34	0.13
Private not-for-profit liberal arts	2.31	2.21	-0.22	0.13
Public 2-year	*2.25*	*2.44*	†	†
Other[8]	2.17	2.18	-0.25	0.14
Total FTE enrollment				
1,500 or less	2.20*	2.22	0.24	0.16
1,501-6,000	2.24*	2.18	0.20	0.14
6,001-12,000	2.06*	2.07	0.09	0.13
12,001-24,000	1.97	2.05	0.07	0.12
More than 24,000	*1.85*	*1.98*	†	†
Taught distance education class				
No	*2.10*	*2.10*	†	†
Yes	2.61*	2.50*	0.40	0.12

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C4.—Number of course preparations taught by instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted number after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	2.12	2.12	2.96	0.24
Gender				
Male	*2.14*	*2.12*	†	†
Female	2.09	2.12	0.00	0.06
Employment intensity				
Full-time	*2.55*	*2.61*	†	†
Part-time	1.56*	1.46*	-1.15	0.07
Teaching discipline				
Business	2.26	2.17	0.07	0.15
Education	2.07	2.08	-0.02	0.15
Engineering/computer science	*2.15*	*2.10*	†	†
Fine arts	2.38	2.48*	0.38	0.15
Health sciences	2.02	2.03	-0.07	0.14
Human services	2.25	2.28	0.17	0.17
Humanities	2.11	2.13	0.03	0.13
Life sciences	2.07	1.96	-0.15	0.16
Natural/physical sciences and math	2.05	2.01	-0.09	0.14
Social sciences	1.98	2.03	-0.07	0.13
Vocational	2.47	2.34	0.24	0.18
Level of classroom instruction[6]				
Undergraduate only	2.15*	2.11*	-0.35	0.10
Both undergraduate and graduate	*2.55*	*2.47*	†	†
Graduate only	1.73*	1.89*	-0.58	0.12
Highest degree				
Doctor's	*2.19*	*2.05*	†	†
First-professional	1.93*	2.24	0.19	0.12
Master's	2.10	2.15	0.10	0.08
Bachelor's	1.96*	2.09	0.04	0.13
Less than bachelor's	2.38	2.37	0.32	0.20
Internet access				
Both at home and at work	*2.16*	*2.13*	†	†
At work only	2.29*	2.17	0.05	0.07
At home only	1.73*	2.03	-0.10	0.10
Neither home nor work	1.82*	2.00	-0.13	0.12

See footnotes at end of table.

Table C4.—Number of course preparations taught by instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted number after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*1.81*	*2.05*	†	†
Fair	2.20*	2.19	0.13	0.14
Good	2.19*	2.11	0.06	0.13
Excellent	2.20*	2.10	0.04	0.14
Institution type				
Public doctoral	1.95*	1.84*	-0.59	0.12
Private not-for-profit doctoral	1.76*	1.80*	-0.63	0.13
Public comprehensive	2.23	2.16*	-0.27	0.11
Private not-for-profit comprehensive	2.08	2.09*	-0.34	0.13
Private not-for-profit liberal arts	2.31	2.22	-0.22	0.13
Public 2-year	*2.25*	*2.43*	†	†
Other[8]	2.17	2.18	-0.26	0.14
Total FTE enrollment				
1,500 or less	2.20*	2.22	0.24	0.16
1,501-6,000	2.24*	2.18	0.20	0.14
6,001-12,000	2.06*	2.07	0.09	0.13
12,001-24,000	1.97	2.05	0.06	0.12
More than 24,000	*1.85*	*1.98*	†	†
Primary medium non-face-to-face				
Yes	2.60*	2.47*	0.38	0.10
No	*2.09*	*2.09*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C5.—Average percentage of time spent on research by instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	10.76	10.76	18.40	1.89
Gender				
Male	*12.63*	*11.16*	†	†
Female	8.10*	10.20	-0.97	0.50
Employment intensity				
Full-time	*15.16*	*12.59*	†	†
Part-time	4.83*	8.31*	-4.28	0.55
Teaching discipline				
Business	7.38*	9.28	-1.19	1.18
Education	7.08*	6.61*	-3.86	1.19
Engineering/computer science	*11.68*	*10.47*	†	†
Fine arts	9.58	13.09*	2.62	1.20
Health sciences	11.02	9.10	-1.37	1.11
Human services	7.19*	8.46	-2.00	1.34
Humanities	9.10	10.99	0.53	1.03
Life sciences	24.16*	19.17*	8.70	1.26
Natural/physical sciences and math	12.08	11.58	1.11	1.12
Social sciences	11.97	11.35	0.88	1.04
Vocational	6.21*	8.88	-1.59	1.46
Level of classroom instruction[6]				
Undergraduate only	7.09*	9.27*	-2.65	0.81
Both undergraduate and graduate	*15.70*	*11.92*	†	†
Graduate only	18.7*	17.33*	5.42	0.95
Highest degree				
Doctor's	*18.33*	*14.48*	†	†
First-professional	11.35*	6.09*	-8.39	0.98
Master's	4.75*	8.43*	-6.05	0.63
Bachelor's	3.60*	8.68*	-5.80	1.01
Less than bachelor's	3.42*	10.17*	-4.31	1.62
Internet access				
Both at home and at work	*12.49*	*11.20*	†	†
At work only	11.32	10.48	-0.72	0.56
At home only	4.99*	9.96	-1.23	0.80
Neither home nor work	5.11*	9.80	-1.40	0.97

See footnotes at end of table.

Table C5.—Average percentage of time spent on research by instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*5.82*	*10.57*	†	†
Fair	9.73*	10.26	-0.31	1.10
Good	11.90*	10.92	0.35	1.05
Excellent	12.30*	10.91	0.35	1.08
Institution type				
Public doctoral	20.20*	15.83*	7.84	0.93
Private not-for-profit doctoral	19.77*	16.11*	8.13	1.04
Public comprehensive	8.98*	8.88	0.90	0.85
Private not-for-profit comprehensive	6.84*	7.46	-0.52	1.00
Private not-for-profit liberal arts	6.66*	7.77	-0.22	1.01
Public 2-year	*3.26*	*7.98*	†	†
Other[8]	5.58*	6.32	-1.66	1.09
Total FTE enrollment				
1,500 or less	6.53*	10.05*	-4.01	1.25
1,501-6,000	6.78*	10.31*	-3.75	1.09
6,001-12,000	9.81*	10.34*	-3.72	1.07
12,001-24,000	16.42*	11.05*	-3.01	0.95
More than 24,000	*23.66*	*14.06*	†	†
Taught distance education class				
No	*9.94*	*10.84*	†	†
Yes	7.23*	9.48	-1.36	0.99

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression, multipled by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C6.—Average percentage of time spent on research by instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	10.76	10.76	18.40	1.89
Gender				
Male	*12.63*	*11.16*	†	†
Female	8.10*	10.19	-0.97	0.50
Employment intensity				
Full-time	*15.16*	*12.59*	†	†
Part-time	4.83*	8.30*	-4.29	0.55
Teaching discipline				
Business	7.38*	9.27	-1.26	1.18
Education	7.08*	6.62*	-3.90	1.19
Engineering/computer science	*11.68*	*10.52*	†	†
Fine arts	9.58	13.11*	2.58	1.21
Health sciences	11.02	9.10	-1.43	1.11
Human services	7.19*	8.44	-2.08	1.34
Humanities	9.10	10.99	0.46	1.03
Life sciences	24.16*	19.18*	8.66	1.26
Natural/physical sciences and math	12.08	11.57	1.05	1.13
Social sciences	11.97	11.33	0.81	1.05
Vocational	6.21*	8.86	-1.66	1.46
Level of classroom instruction[6]				
Undergraduate only	7.09*	9.28*	-2.60	0.81
Both undergraduate and graduate	*15.70*	*11.88*	†	†
Graduate only	18.70*	17.33*	5.45	0.95
Highest degree				
Doctor's	*18.33*	*14.48*	†	†
First-professional	11.35*	6.08*	-8.39	0.98
Master's	4.75*	8.43*	-6.05	0.63
Bachelor's	3.60*	8.71*	-5.77	1.01
Less than bachelor's	3.42*	10.21*	-4.27	1.62
Internet access				
Both at home and at work	*12.49*	*11.20*	†	†
At work only	11.32	10.47	-0.73	0.56
At home only	4.99*	9.98	-1.23	0.80
Neither home nor work	5.11*	9.77	-1.43	0.97

See footnotes at end of table.

Table C6.—Average percentage of time spent on research by instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*5.82*	*10.56*	†	†
Fair	9.73*	10.26	-0.30	1.10
Good	11.90*	10.92	0.36	1.05
Excellent	12.30*	10.91	0.35	1.08
Institution type				
Public doctoral	20.20*	15.82*	7.85	0.93
Private not-for-profit doctoral	19.77*	16.13*	8.15	1.04
Public comprehensive	8.98*	8.88	0.90	0.85
Private not-for-profit comprehensive	6.84*	7.47	-0.50	1.00
Private not-for-profit liberal arts	6.66*	7.78	-0.20	1.01
Public 2-year	*3.26*	*7.97*	†	†
Other[8]	5.58*	6.34	-1.64	1.09
Total FTE enrollment				
1,500 or less	6.53*	10.06*	-4.01	1.25
1,501-6,000	6.78*	10.31*	-3.76	1.09
6,001-12,000	9.81*	10.33*	-3.74	1.07
12,001-24,000	16.42*	11.06*	-3.01	0.95
More than 24,000	*23.66*	*14.07*	†	†
Primary medium non-face-to-face				
Yes	7.66*	10.14	-0.68	0.82
No	*9.99*	*10.82*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression, multiplied by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C7.—Average percentage of time spent on service and other activities by instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	20.94	20.94	8.73	3.51
Gender				
Male	*20.78*	*21.52*	†	†
Female	21.16	20.11	-1.41	0.94
Employment intensity				
Full-time	*14.32*	*14.72*	†	†
Part-time	29.85*	29.30*	14.58	1.03
Teaching discipline				
Business	22.05	22.57	-0.86	2.20
Education	19.91	20.92	-2.51	2.22
Engineering/computer science	*22.65*	*23.43*	†	†
Fine arts	24.26	23.28	-0.15	2.24
Health sciences	31.68*	27.16	3.74	2.06
Human services	23.69	23.18	-0.24	2.50
Humanities	14.97*	16.21*	-7.22	1.92
Life sciences	11.83*	15.98*	-7.45	2.35
Natural/physical sciences and math	12.84*	15.35*	-8.08	2.09
Social sciences	21.89	21.50	-1.93	1.94
Vocational	23.00	21.86	-1.56	2.71
Level of classroom instruction[6]				
Undergraduate only	19.29*	20.34	0.02	1.51
Both undergraduate and graduate	*15.81*	*20.33*	†	†
Graduate only	26.76*	24.36*	4.03	1.77
Highest degree				
Doctor's	*13.72*	*17.40*	†	†
First-professional	38.58*	32.53*	15.12	1.82
Master's	22.17*	20.98*	3.57	1.17
Bachelor's	28.81*	24.45*	7.05	1.89
Less than bachelor's	29.21*	24.32*	6.91	3.01
Internet access				
Both at home and at work	*20.91*	*21.41*	†	†
At work only	17.12*	19.75	-1.65	1.03
At home only	28.17*	22.60	1.20	1.50
Neither home nor work	23.02	18.89	-2.51	1.81

See footnotes at end of table.

Table C7.—Average percentage of time spent on service and other activities by instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998 —Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*22.23*	*18.41*	†	†
Fair	21.22	21.19	2.78	2.05
Good	19.47	20.64	2.23	1.95
Excellent	20.42	21.72	3.31	2.02
Institution type				
Public doctoral	19.81	22.15	3.03	1.74
Private not-for-profit doctoral	24.64	23.03*	3.90	1.94
Public comprehensive	19.10	22.10	2.97	1.58
Private not-for-profit comprehensive	20.06	19.33	0.20	1.87
Private not-for-profit liberal arts	18.10	19.81	0.68	1.88
Public 2-year	*21.87*	*19.13*	†	†
Other[8]	24.27	21.59	2.46	2.03
Total FTE enrollment				
1,500 or less	24.27*	22.11	2.30	2.32
1,501-6,000	21.11	21.21	1.40	2.02
6,001-12,000	20.51	20.72	0.91	1.98
12,001-24,000	19.75	20.33	0.52	1.77
More than 24,000	*18.30*	*19.81*	†	†
Taught distance education class				
No	*20.04*	*21.01*	†	†
Yes	19.38	19.71	-1.30	1.85

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression, multiplied by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C8.—Average percentage of time spent on service and other activities by instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	20.94	20.94	8.92	3.52
Gender				
Male	*20.78*	*21.51*	†	†
Female	21.16	20.12	-1.39	0.94
Employment intensity				
Full-time	*14.32*	*14.74*	†	†
Part-time	29.85*	29.28*	14.54	1.03
Teaching discipline				
Business	22.05	22.59	-0.98	2.20
Education	19.91	20.94	-2.62	2.22
Engineering/computer science	*22.65*	*23.56*	†	†
Fine arts	24.26	23.27	-0.30	2.25
Health sciences	31.68*	27.17	3.61	2.07
Human services	23.69	23.16	-0.40	2.50
Humanities	14.97*	16.16*	-7.40	1.93
Life sciences	11.83*	15.97*	-7.60	2.35
Natural/physical sciences and math	12.84*	15.33*	-8.24	2.10
Social sciences	21.89	21.47	-2.10	1.95
Vocational	23.00	21.89	-1.67	2.71
Level of classroom instruction[6]				
Undergraduate only	19.29*	20.35	0.02	1.51
Both undergraduate and graduate	*15.81*	*20.32*	†	†
Graduate only	26.76*	24.35*	4.03	1.77
Highest degree				
Doctor's	*13.72*	*17.39*	†	†
First-professional	38.58*	32.54*	15.16	1.82
Master's	22.17*	20.99*	3.60	1.17
Bachelor's	28.81*	24.48*	7.10	1.89
Less than bachelor's	29.21*	24.32*	6.93	3.01
Internet access				
Both at home and at work	*20.91*	*21.42*	†	†
At work only	17.12*	19.73	-1.69	1.03
At home only	28.17*	22.62	1.20	1.50
Neither home nor work	23.02	18.85	-2.57	1.81

See footnotes at end of table.

Table C8.—Average percentage of time spent on service and other activities by instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998 —Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*22.23*	*18.36*	†	†
Fair	21.22	21.20	2.84	2.05
Good	19.47	20.64	2.27	1.95
Excellent	20.42	21.72	3.36	2.02
Institution type				
Public doctoral	19.81	22.13	2.98	1.74
Private not-for-profit doctoral	24.64	23.00*	3.85	1.94
Public comprehensive	19.10	22.10	2.94	1.58
Private not-for-profit comprehensive	20.06	19.34	0.18	1.87
Private not-for-profit liberal arts	18.10	19.78	0.62	1.88
Public 2-year	*21.87*	*19.15*	†	†
Other[8]	24.27	21.62	2.47	2.03
Total FTE enrollment				
1,500 or less	24.27*	22.12	2.33	2.32
1,501-6,000	21.11	21.22	1.43	2.02
6,001-12,000	20.51	20.70	0.91	1.98
12,001-24,000	19.75	20.34	0.55	1.77
More than 24,000	*18.30*	*19.79*	†	†
Primary medium non-face-to-face				
Yes	19.40	19.35	-1.74	1.53
No	*20.06*	*21.09*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression, multiplied by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C9.—Base salary of instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted amount after controlling for covariation of the variables listed in the table: Calendar year 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	$37,577.04	$37,577.04	$64,723.65	$2,615.94
Gender				
Male	*43,059.59*	*39,726.47*	†	†
Female	29,760.81*	34,513.20*	-5,213.28	699.08
Employment intensity				
Full-time	*56,851.49*	*53,781.92*	†	†
Part-time	11,613.95*	15,751.22*	-38,030.71	764.14
Teaching discipline				
Business	36,909.74	39,589.45	1,405.53	1,635.94
Education	31,165.27*	33,497.18*	-4,686.74	1,654.72
Engineering/computer science	*40,036.20*	*38,183.92*	†	†
Fine arts	26,412.99*	35,281.05	-2,902.87	1,668.97
Health sciences	53,777.46*	45,554.21*	7,370.29	1,537.82
Human services	29,888.00*	33,845.46*	-4,338.46	1,862.66
Humanities	30,209.90*	35,082.23*	-3,101.69	1,428.65
Life sciences	51,167.11*	38,430.72	246.80	1,749.47
Natural/physical sciences and math	38,367.68	37,283.77	-900.15	1,558.47
Social sciences	37,655.22	36,559.24	-1,624.68	1,446.59
Vocational	30,331.90*	35,311.88	-2,872.04	2,019.72
Level of classroom instruction[6]				
Undergraduate only	30,056.60*	35,914.92*	-5,526.91	1,124.49
Both undergraduate and graduate	*54,229.33*	*41,441.83*	†	†
Graduate only	53,093.22	42,939.54	1,497.71	1,317.09
Highest degree				
Doctor's	*51,595.70*	*40,716.46*	†	†
First-professional	59,313.84	48,294.31*	7,577.85	1,356.43
Master's	23,769.40*	33,578.29*	-7,138.17	872.25
Bachelor's	16,714.99*	31,035.59*	-9,680.87	1,405.01
Less than bachelor's	17,336.40*	32,451.53*	-8,264.93	2,241.67
Internet access				
Both at home and at work	*42,664.93*	*38,210.99*	†	†
At work only	40,635.90	36,625.84*	-1,585.15	770.54
At home only	16,768.12*	36,207.82	-2,003.17	1,115.56
Neither home nor work	21,942.54*	38,478.02	267.03	1,346.15

See footnotes at end of table.

Table C9.—Base salary of instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted amount after controlling for covariation of the variables listed in the table: Calendar year 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*$22,390.23*	*$37,277.45*	†	†
Fair	35,233.61*	36,288.82	-988.63	1,524.44
Good	40,377.93*	36,878.24	-399.21	1,452.39
Excellent	44,673.65*	39,548.01	2,270.56	1,502.37
Institution type				
Public doctoral	54,495.08*	41,445.53*	4,919.34	1,294.06
Private not-for-profit doctoral	55,669.46*	45,757.12*	9,230.93	1,448.18
Public comprehensive	35,229.10*	34,235.83	-2,290.36	1,173.66
Private not-for-profit comprehensive	30,267.31*	33,758.23*	-2,767.96	1,389.93
Private not-for-profit liberal arts	30,431.90*	33,092.97*	-3,433.22	1,401.59
Public 2-year	*22,885.25*	*36,526.19*	†	†
Other[8]	28,996.28*	32,029.22*	-4,496.97	1,515.87
Total FTE enrollment				
1,500 or less	31,298.84*	37,081.56	-2,416.03	1,729.56
1,501-6,000	31,296.35*	37,090.36	-2,407.23	1,506.00
6,001-12,000	35,727.29*	37,920.20	-1,577.39	1,478.43
12,001-24,000	47,120.17*	37,600.24	-1,897.36	1,317.76
More than 24,000	*57,016.09*	*39,497.59*	†	†
Taught distance education class				
No	*36,156.37*	*37,554.18*	†	†
Yes	36,695.82	37,943.57	389.39	1,375.00

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C10.—Base salary of instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted amount after controlling for covariation of the variables listed in the table: Calendar year 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	$37,577.03	$37,577.04	$64,551.50	$2,620.11
Gender				
Male	*43,059.59*	*39,734.69*	†	†
Female	29,760.81*	34,501.48*	-5,233.21	699.14
Employment intensity				
Full-time	*56,851.49*	*53,769.13*	†	†
Part-time	11,613.95*	15,768.45*	-38,000.67	764.63
Teaching discipline				
Business	36,909.74	39,562.50	1,472.07	1,636.17
Education	31,165.27*	33,480.02*	-4,610.41	1,656.06
Engineering/computer science	*40,036.20*	*38,090.43*	†	†
Fine arts	26,412.99*	35,300.74	-2,789.69	1,672.51
Health sciences	53,777.46*	45,543.93*	7,453.50	1,539.35
Human services	29,888.00*	33,853.14*	-4,237.29	1,864.43
Humanities	30,209.90*	35,119.94*	-2,970.50	1,434.20
Life sciences	51,167.11*	38,449.66	359.23	1,752.78
Natural/physical sciences and math	38,367.68	37,304.29	-786.14	1,562.18
Social sciences	37,655.22	36,579.32	-1,511.11	1,450.28
Vocational	30,331.90*	35,273.84	-2,816.59	2,019.09
Level of classroom instruction[6]				
Undergraduate only	30,056.60*	35,918.11*	-5,502.34	1,122.87
Both undergraduate and graduate	*54,229.33*	*41,420.45*	†	†
Graduate only	53,093.22	42,939.83	1,519.38	1,316.37
Highest degree				
Doctor's	*51,595.70*	*40,731.66*	†	†
First-professional	59,313.84	48,277.15*	7,545.49	1,356.60
Master's	23,769.40*	33,566.70*	-7,164.96	872.47
Bachelor's	16,714.99*	31,025.98*	-9,705.67	1,404.80
Less than bachelor's	17336.4*	32,474.93*	-8,256.73	2,240.96
Internet access				
Both at home and at work	*42,664.93*	*38,201.72*	†	†
At work only	40,635.90	36,641.65*	-1,560.07	770.86
At home only	16,768.12*	36,201.14	-2,000.58	1,115.41
Neither home nor work	21,942.54*	38,502.54	300.82	1,346.25

See footnotes at end of table.

Table C10.—Base salary of instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted amount after controlling for covariation of the variables listed in the table: Calendar year 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*$22,390.23*	*$37,313.78*	†	†
Fair	35,233.61*	36,279.36	-1,034.43	1,524.95
Good	40,377.93*	36,883.76	-430.03	1,452.56
Excellent	44,673.65*	39,538.80	2,225.02	1,502.80
Institution type				
Public doctoral	54,495.08*	41464.13*	4,970.24	1,294.47
Private not-for-profit doctoral	55,669.46*	45786.39*	9,292.50	1,448.20
Public comprehensive	35,229.10*	34,235.78	-2,258.11	1,173.75
Private not-for-profit comprehensive	30,267.31*	33755.49*	-2,738.40	1,389.64
Private not-for-profit liberal arts	30,431.90*	33127.41*	-3,366.48	1,402.08
Public 2-year	*22,885.25*	*36,493.90*	†	†
Other[8]	28,996.28*	32011.03*	-4,482.87	1,515.35
Total FTE enrollment				
1,500 or less	31,298.84*	37,074.10	-2,445.88	1,729.59
1,501-6,000	31,296.35*	37,084.93	-2,435.05	1,505.87
6,001-12,000	35,727.29*	37,933.09	-1,586.90	1,478.16
12,001-24,000	47,120.17*	37,592.50	-1,927.49	1,317.88
More than 24,000	*57,016.09*	*39,519.99*	†	†
Primary medium non-face-to-face				
Yes	37,627.81	38,668.32	1,199.21	1,137.22
No	*36,045.69*	*37,469.11*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C11.—Other institutional income of instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted amount after controlling for covariation of the variables listed in the table: Calendar year 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	$2,627.05	$2,627.05	$6,076.64	$1,182.54
Gender				
Male	*3,195.05*	*2,928.43*	†	†
Female	1,817.28*	2,197.46*	-730.97	316.02
Employment intensity				
Full-time	*3,988.00*	*3,761.80*	†	†
Part-time	793.83*	1,098.70*	-2,663.09	345.43
Teaching discipline				
Business	3,584.04	3,675.54	305.06	739.53
Education	2,215.93*	2,360.54	-1,009.93	748.02
Engineering/computer science	*3,737.37*	*3,370.47*	†	†
Fine arts	1,706.33*	2,370.28	-1,000.19	754.46
Health sciences	2,747.30	2,444.66	-925.82	695.17
Human services	2,540.55	2,823.03	-547.44	842.02
Humanities	1,828.73*	2,174.73	-1,195.75	645.82
Life sciences	2,840.98	1,934.26	-1,436.21	790.85
Natural/physical sciences and math	2,978.54	2,727.72	-642.75	704.51
Social sciences	2,836.19	2,759.69	-610.78	653.93
Vocational	2,538.40	2,721.49	-648.99	913.02
Level of classroom instruction[6]				
Undergraduate only	2,190.82*	2,431.38	-670.72	508.33
Both undergraduate and graduate	*4,152.18*	*3,102.10*	†	†
Graduate only	3,594.13	3,243.09	140.99	595.39
Highest degree				
Doctor's	*3,707.91*	*2,888.31*	†	†
First-professional	3,098.67	2,657.88	-230.43	613.18
Master's	1,756.21*	2,446.88	-441.43	394.30
Bachelor's	1,400.01*	2,344.67	-543.64	635.13
Less than bachelor's	1,096.82*	2,057.58	-830.73	1,013.35
Internet access				
Both at home and at work	*3,123.75*	*2,768.46*	†	†
At work only	2,737.53	2,486.67	-281.79	348.32
At home only	936.08*	2,396.20	-372.26	504.29
Neither home nor work	1,222.34*	2,439.12	-329.34	608.53

See footnotes at end of table.

Table C11.—Other institutional income of instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted amount after controlling for covariation of the variables listed in the table: Calendar year 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*$1,253.55*	*$2,407.07*	†	†
Fair	2,361.84*	2,466.17	59.10	689.12
Good	2,991.91*	2,730.71	323.64	656.56
Excellent	3,011.40*	2,624.89	217.82	679.15
Institution type				
Public doctoral	3,740.28*	2,635.86	-269.18	584.98
Private not-for-profit doctoral	3,727.68*	3,005.61	100.57	654.65
Public comprehensive	2,634.86*	2,383.96	-521.08	530.56
Private not-for-profit comprehensive	2,018.51	2,209.50	-695.55	628.32
Private not-for-profit liberal arts	1,725.04	2,300.14	-604.90	633.59
Public 2-year	*1,873.78*	*2,905.04*	†	†
Other[8]	1,668.13	2,279.62	-625.42	685.25
Total FTE enrollment				
1,500 or less	1,503.06*	1,974.61	-1,043.73	781.85
1,501-6,000	2,142.27*	2,464.27	-554.07	680.79
6,001-12,000	2,795.99*	2,875.03	-143.31	668.33
12,001-24,000	3,468.44	2,949.69	-68.66	595.69
More than 24,000	*4,047.72*	*3,018.34*	†	†
Taught distance education class				
No	*2,560.33*	*2,570.07*	†	†
Yes	3,565.85*	3,540.81	970.74	621.57

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C12.—Other institutional income of instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted amount after controlling for covariation of the variables listed in the table: Calendar year 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	$2,627.05	$2,627.05	$6,112.74	$1,185.24
Gender				
Male	*3,195.05*	*2,925.08*	†	†
Female	1,817.28*	2,202.23*	-722.85	316.26
Employment intensity				
Full-time	*3,988.00*	*3,761.10*	†	†
Part-time	793.83*	1,099.64*	-2,661.46	345.89
Teaching discipline				
Business	3,584.04	3,691.12	346.11	740.14
Education	2,215.93*	2,357.28	-987.73	749.14
Engineering/computer science	*3,737.37*	*3,345.01*	†	†
Fine arts	1,706.33*	2,355.33	-989.68	756.58
Health sciences	2,747.30	2,450.95	-894.06	696.35
Human services	2,540.55	2,839.03	-505.98	843.40
Humanities	1,828.73*	2,171.92	-1,173.09	648.78
Life sciences	2,840.98	1,922.05	-1,422.96	792.89
Natural/physical sciences and math	2,978.54	2,725.95	-619.06	706.67
Social sciences	2,836.19	2,767.07	-577.94	656.05
Vocational	2,538.40	2,745.37	-599.64	913.36
Level of classroom instruction[6]				
Undergraduate only	2,190.82*	2,425.17	-710.46	507.95
Both undergraduate and graduate	*4,152.18*	*3,135.63*	†	†
Graduate only	3,594.13	3,248.66	113.03	595.48
Highest degree				
Doctor's	*3,707.91*	*2,887.88*	†	†
First-professional	3,098.67	2,663.74	-224.14	613.68
Master's	1,756.21*	2,452.60	-435.28	394.67
Bachelor's	1,400.01*	2,323.98	-563.89	635.48
Less than bachelor's	1,096.82*	2,026.67	-861.21	1,013.73
Internet access				
Both at home and at work	*3,123.75*	*2,767.11*	†	†
At work only	2,737.53	2,488.61	-278.50	348.71
At home only	936.08*	2,388.91	-378.19	504.57
Neither home nor work	1,222.34*	2,454.72	-312.39	608.99

See footnotes at end of table.

Table C12.—Other institutional income of instructional faculty and staff at degree-granting institutions, by whether they taught non-face-to-face classes and other factors, and the adjusted amount after controlling for covariation of the variables listed in the table: Calendar year 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*$1,253.55*	*$2,405.99*	†	†
Fair	2,361.84*	2,462.65	56.66	689.83
Good	2,991.91*	2,728.18	322.18	657.08
Excellent	3,011.40*	2,631.26	225.27	679.81
Institution type				
Public doctoral	3,740.28*	2,632.95	-287.18	585.57
Private not-for-profit doctoral	3,727.68*	2,988.12	67.99	655.11
Public comprehensive	2,634.86*	2,386.22	-533.91	530.96
Private not-for-profit comprehensive	2,018.51	2,203.39	-716.74	628.62
Private not-for-profit liberal arts	1,725.04	2,286.91	-633.21	634.25
Public 2-year	*1,873.78*	*2,920.13*	†	†
Other[8]	1,668.13	2,271.92	-648.21	685.49
Total FTE enrollment				
1,500 or less	1,503.06*	1,969.74	-1,038.38	782.40
1,501-6,000	2,142.27*	2,468.95	-539.17	681.20
6,001-12,000	2,795.99*	2,878.10	-130.02	668.66
12,001-24,000	3,468.44	2,946.41	-61.71	596.16
More than 24,000	*4,047.72*	*3,008.12*	†	†
Primary medium non-face-to-face				
Yes	3,014.00	2,898.87	298.71	514.43
No	*2,580.30*	*2,600.17*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C13.—Student contact hours per week of instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted hours after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	257.91	257.91	282.94	60.73
Gender				
Male	*273.01*	*270.88*	†	†
Female	236.41*	239.42	-31.46	16.23
Employment intensity				
Full-time	*320.50*	*325.71*	†	†
Part-time	175.53*	166.59*	-159.12	17.74
Teaching discipline				
Business	268.56*	262.86*	83.84	37.98
Education	208.01	229.46	50.44	38.41
Engineering/computer science	*206.99*	*179.02*	†	†
Fine arts	225.34	235.50	56.48	38.75
Health sciences	335.88*	324.51*	145.48	35.70
Human services	228.27	235.48	56.46	43.24
Humanities	223.10	227.59	48.57	33.17
Life sciences	345.32*	329.12*	150.10	40.61
Natural/physical sciences and math	275.32*	262.06*	83.04	36.18
Social sciences	245.74*	252.61*	73.59	33.58
Vocational	354.20*	330.45*	151.43	46.89
Level of classroom instruction[6]				
Undergraduate only	259.81	266.84	2.84	26.11
Both undergraduate and graduate	*286.83*	*264.00*	†	†
Graduate only	226.45*	208.69	-55.31	30.58
Highest degree				
Doctor's	*260.36*	*231.34*	†	†
First-professional	320.88	306.43*	75.09	31.49
Master's	248.93	272.71*	41.37	20.25
Bachelor's	224.43	255.77	24.43	32.62
Less than bachelor's	292.00	290.57	59.23	52.04
Internet access				
Both at home and at work	*269.50*	*261.52*	†	†
At work only	273.65	256.69	-4.83	17.89
At home only	201.31*	253.97	-7.55	25.90
Neither home nor work	206.69*	241.13	-20.39	31.25

See footnotes at end of table.

Table C13.—Student contact hours per week of instructional faculty and staff at degree-granting institutions, by whether they taught distance education classes and other factors, and the adjusted hours after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*210.17*	*244.87*	†	†
Fair	262.76*	264.87	19.99	35.39
Good	267.47*	255.87	11.00	33.72
Excellent	279.37*	258.90	14.03	34.88
Institution type				
Public doctoral	281.91	242.26	-57.52	30.04
Private not-for-profit doctoral	219.40*	205.40*	-94.38	33.62
Public comprehensive	269.58	265.28	-34.50	27.25
Private not-for-profit comprehensive	194.04*	222.00*	-77.78	32.27
Private not-for-profit liberal arts	219.38	238.70	-61.08	32.54
Public 2-year	*278.63*	*299.78*	†	†
Other[8]	235.09	268.12	-31.66	35.19
Total FTE enrollment				
1,500 or less	231.51	234.64	-37.10	40.15
1,501-6,000	250.23	246.29	-25.46	34.96
6,001-12,000	269.37	273.98	2.23	34.32
12,001-24,000	270.48	272.23	0.48	30.59
More than 24,000	*270.92*	*271.75*	†	†
Taught distance education class				
No	*254.35*	*255.24*	†	†
Yes	314.97*	300.67	45.43	31.92

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C14.—Student contact hours per week of instructional faculty and staff at degree-granting institutions, by whether they taught non–face-to-face classes and other factors, and the adjusted hours after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Total	257.91	257.91	278.17	60.81
Gender				
Male	*273.01*	*271.06*	†	†
Female	236.41*	239.17*	-31.89	16.23
Employment intensity				
Full-time	*320.50*	*325.24*	†	†
Part-time	175.53*	167.22*	-158.03	17.75
Teaching discipline				
Business	268.56*	262.44*	87.49	37.97
Education	208.01	228.76	53.81	38.43
Engineering/computer science	*206.99*	*174.95*	†	†
Fine arts	225.34	235.69	60.74	38.81
Health sciences	335.88*	324.36*	149.41	35.72
Human services	228.27	236.28	61.33	43.27
Humanities	223.10	228.81	53.86	33.28
Life sciences	345.32*	329.38*	154.43	40.68
Natural/physical sciences and math	275.32*	262.71*	87.76	36.25
Social sciences	245.74*	253.55*	78.60	33.66
Vocational	354.2*	329.92*	154.97	46.86
Level of classroom instruction[6]				
Undergraduate only	259.81	266.75	2.39	26.06
Both undergraduate and graduate	*286.83*	*264.36*	†	†
Graduate only	226.45*	208.88	-55.48	30.55
Highest degree				
Doctor's	*260.36*	*231.85*	†	†
First-professional	320.88	306.03*	74.18	31.48
Master's	248.93	272.49*	40.64	20.25
Bachelor's	224.43	254.76	22.91	32.60
Less than bachelor's	292.00	290.37	58.51	52.01
Internet access				
Both at home and at work	*269.50*	*261.15*	†	†
At work only	273.65	257.30	-3.86	17.89
At home only	201.31*	253.50	-7.65	25.89
Neither home nor work	206.69*	242.49	-18.66	31.24

See footnotes at end of table.

Table C14.—Student contact hours per week of instructional faculty and staff at degree-granting institutions, by whether they taught non–face-to-face classes and other factors, and the adjusted hours after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted mean[2]	Adjusted mean[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*210.17*	*246.09*	†	†
Fair	262.76*	264.42	18.33	35.39
Good	267.47*	255.98	9.88	33.71
Excellent	279.37*	258.79	12.70	34.88
Institution type				
Public doctoral	281.91	242.81	-56.35	30.04
Private not-for-profit doctoral	219.40*	205.84*	-93.32	33.61
Public comprehensive	269.58	265.36	-33.80	27.24
Private not-for-profit comprehensive	194.04*	221.71*	-77.45	32.25
Private not-for-profit liberal arts	219.38	239.45	-59.70	32.54
Public 2-year	*278.63*	*299.16*	†	†
Other[8]	235.09	267.23	-31.93	35.17
Total FTE enrollment				
1,500 or less	231.51	234.23	-37.96	40.14
1,501-6,000	250.23	246.26	-25.93	34.95
6,001-12,000	269.37	274.52	2.34	34.30
12,001-24,000	270.48	271.85	-0.34	30.58
More than 24,000	*270.92*	*272.19*	†	†
Taught non–face-to-face class				
Yes	317.47*	304.62	51.33	26.39
No	*252.02*	*253.29*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C15.—Percentage of instructional faculty and staff at degree-granting institutions who communicated with students by e-mail, by whether they taught distance education classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	59.00	59.00	82.42	5.79
Gender				
Male	*61.53*	*58.10*	†	†
Female	55.44*	60.20	2.07	1.55
Employment intensity				
Full-time	*68.95*	*62.30*	†	†
Part-time	46.01*	54.60*	-7.65	1.69
Teaching discipline				
Business	66.85	65.60	-6.11	3.62
Education	64.09*	60.30*	-11.48	3.66
Engineering/computer science	*75.48*	*71.80*	†	†
Fine arts	45.03*	53.90*	-17.89	3.69
Health sciences	43.17*	43.70*	-28.04	3.40
Human services	48.25*	52.70*	-19.05	4.12
Humanities	59.94*	63.10*	-8.69	3.16
Life sciences	65.55	57.10*	-14.65	3.87
Natural/physical sciences and math	61.55*	59.30*	-12.44	3.45
Social sciences	66.11*	63.60*	-8.16	3.20
Vocational	47.68*	57.30*	-14.42	4.47
Level of classroom instruction[6]				
Undergraduate only	55.15*	58.40	-3.12	2.49
Both undergraduate and graduate	*77.98*	*61.50*	†	†
Graduate only	66.16*	60.20	-1.33	2.91
Highest degree				
Doctor's	*74.54*	*64.00*	†	†
First-professional	48.43*	50.40*	-13.58	3.00
Master's	51.69*	57.70*	-6.32	1.93
Bachelor's	39.49*	53.10*	-10.85	3.11
Less than bachelor's	24.64*	49.50*	-14.54	4.96
Internet access				
Both at home and at work	*72.11*	*69.30*	†	†
At work only	54.65*	52.60*	-16.71	1.70
At home only	40.43*	50.40*	-18.92	2.47
Neither home nor work	7.13*	17.10*	-52.24	2.98

See footnotes at end of table.

Table C15.—Percentage of instructional faculty and staff at degree-granting institutions who communicated with students by e-mail, by whether they taught distance education classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998 —Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*40.81*	*56.80*	†	†
Fair	56.86*	57.10	0.34	3.37
Good	62.67*	59.00	2.21	3.21
Excellent	66.25*	60.80	4.04	3.32
Institution type				
Public doctoral	75.05*	65.50*	19.93	2.86
Private not-for-profit doctoral	68.87*	66.00*	20.43	3.20
Public comprehensive	65.91*	62.70*	17.14	2.60
Private not-for-profit comprehensive	64.89*	65.40*	19.79	3.07
Private not-for-profit liberal arts	63.93*	67.10*	21.51	3.10
Public 2-year	*39.09*	*45.60*	†	†
Other[8]	48.31	54.70*	9.07	3.35
Total FTE enrollment				
1,500 or less	47.35*	52.40*	-13.35	3.83
1,501-6,000	52.32*	57.20*	-8.53	3.33
6,001-12,000	58.59*	59.80	-5.92	3.27
12,001-24,000	71.45*	62.90	-2.89	2.91
More than 24,000	*81.60*	*65.80*	†	†
Taught distance education class				
No	*58.81*	*58.30*	†	†
Yes	68.11*	70.20*	11.94	3.04

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression, multiplied by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C16.—Percentage of instructional faculty and staff at degree-granting institutions who communicated with students by e-mail, by whether they taught non-face-to-face classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	59.00	59.00	81.97	5.80
Gender				
Male	*61.53*	*58.10*	†	†
Female	55.44*	60.20	2.06	1.55
Employment intensity				
Full-time	*68.95*	*62.20*	†	†
Part-time	46.01*	54.70*	-7.49	1.69
Teaching discipline				
Business	66.85	65.70	-5.37	3.62
Education	64.09*	60.20*	-10.89	3.67
Engineering/computer science	*75.48*	*71.00*	†	†
Fine arts	45.03*	53.80*	-17.24	3.70
Health sciences	43.17*	43.70*	-27.32	3.41
Human services	48.25*	52.90*	-18.13	4.13
Humanities	59.94*	63.20*	-7.83	3.17
Life sciences	65.55	57.10*	-13.97	3.88
Natural/physical sciences and math	61.55*	59.40*	-11.65	3.46
Social sciences	66.11*	63.80*	-7.27	3.21
Vocational	47.68*	57.40*	-13.65	4.47
Level of classroom instruction[6]				
Undergraduate only	55.15*	58.30	-3.41	2.49
Both undergraduate and graduate	*77.98*	*61.70*	†	†
Graduate only	66.16*	60.20	-1.51	2.91
Highest degree				
Doctor's	*74.54*	*64.10*	†	†
First-professional	48.43*	50.40*	-13.67	3.00
Master's	51.69*	57.70*	-6.38	1.93
Bachelor's	39.49*	52.90*	-11.18	3.11
Less than bachelor's	24.64*	49.20*	-14.82	4.96
Internet access				
Both at home and at work	*72.11*	*69.30*	†	†
At work only	54.65*	52.70*	-16.56	1.71
At home only	40.43*	50.30*	-18.97	2.47
Neither home nor work	7.13*	17.40*	-51.90	2.98

See footnotes at end of table.

Table C16.—Percentage of instructional faculty and staff at degree-granting institutions who communicated with students by e-mail, by whether they taught non-face-to-face classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*40.81*	*56.90*	†	†
Fair	56.86*	57.00	0.09	3.38
Good	62.67*	59.00	2.05	3.21
Excellent	66.25*	60.80	3.90	3.33
Institution type				
Public doctoral	75.05*	65.60*	19.99	2.86
Private not-for-profit doctoral	68.87*	66.00*	20.39	3.21
Public comprehensive	65.91*	62.80*	17.16	2.60
Private not-for-profit comprehensive	64.89*	65.30*	19.71	3.08
Private not-for-profit liberal arts	63.93*	67.10*	21.54	3.10
Public 2-year	*39.09*	*45.60*	†	†
Other[8]	48.31	54.50*	8.90	3.35
Total FTE enrollment				
1,500 or less	47.35*	52.30*	-13.43	3.83
1,501-6,000	52.32*	57.30*	-8.51	3.33
6,001-12,000	58.59*	59.90	-5.83	3.27
12,001-24,000	71.45*	62.80	-2.96	2.92
More than 24,000	*81.60*	*65.80*	†	†
Primary medium non-face-to-face				
Yes	66.75*	67.00*	8.84	2.52
No	*58.62*	*58.20*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression, multiplied by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C17.—Percentage of instructional faculty and staff at degree-granting institutions who used Web sites for their classes, by whether they taught distance education classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	37.58	37.60	46.96	6.85
Gender				
Male	*40.12*	*38.80*	†	†
Female	33.99*	35.90	-2.90	1.83
Employment intensity				
Full-time	*40.17*	*37.30*	†	†
Part-time	34.20*	38.00	0.67	2.00
Teaching discipline				
Business	43.10	42.40	-6.21	4.29
Education	35.64*	35.30*	-13.22	4.34
Engineering/computer science	*51.38*	*48.60*	†	†
Fine arts	36.55*	39.50*	-9.06	4.37
Health sciences	33.17*	33.20*	-15.38	4.03
Human services	30.37*	32.00*	-16.58	4.88
Humanities	36.08*	37.70*	-10.88	3.74
Life sciences	35.99*	33.80*	-14.73	4.58
Natural/physical sciences and math	37.28*	36.20*	-12.36	4.08
Social sciences	35.51*	34.60*	-13.95	3.79
Vocational	47.82	48.60	0.08	5.29
Level of classroom instruction[6]				
Undergraduate only	36.24*	37.20*	-6.54	2.95
Both undergraduate and graduate	*49.10*	*43.70*	†	†
Graduate only	36.64*	35.00*	-8.76	3.45
Highest degree				
Doctor's	*41.25*	*38.50*	†	†
First-professional	34.23	35.20	-3.38	3.55
Master's	35.54*	37.70	-0.83	2.29
Bachelor's	34.40	36.20	-2.32	3.68
Less than bachelor's	31.99	33.70	-4.80	5.87
Internet access				
Both at home and at work	*43.22*	*41.40*	†	†
At work only	33.82*	33.40*	-7.94	2.02
At home only	26.43*	32.30*	-9.11	2.92
Neither home nor work	27.45*	32.50*	-8.82	3.53

See footnotes at end of table.

Table C17.—Percentage of instructional faculty and staff at degree-granting institutions who used Web sites for their classes, by whether they taught distance education classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*16.31*	*19.20*	†	†
Fair	33.91*	33.40*	14.26	3.99
Good	40.63*	38.80*	19.66	3.81
Excellent	45.08*	42.30*	23.12	3.94
Institution type				
Public doctoral	41.61*	36.50	0.80	3.39
Private not-for-profit doctoral	47.78*	46.80*	11.08	3.79
Public comprehensive	41.05	41.60	5.84	3.07
Private not-for-profit comprehensive	31.78	32.30	-3.44	3.64
Private not-for-profit liberal arts	34.83	37.70	1.92	3.67
Public 2-year	*33.76*	*35.70*	†	†
Other[8]	30.54	34.30	-1.44	3.97
Total FTE enrollment				
1,500 or less	31.43*	34.70*	-10.63	4.53
1,501-6,000	35.40*	36.90*	-8.42	3.95
6,001-12,000	35.96*	34.70*	-10.70	3.87
12,001-24,000	42.57*	40.20	-5.12	3.45
More than 24,000	*49.29*	*45.40*	†	†
Taught distance education class				
No	*36.83*	*36.70*	†	†
Yes	52.42*	52.10*	15.38	3.60

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression, multiplied by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

Table C18.—Percentage of instructional faculty and staff at degree-granting institutions who used Web sites for their classes, by whether they taught non-face-to-face classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Total	37.58	37.60	46.41	6.87
Gender				
Male	*40.12*	*38.80*	†	†
Female	33.99*	35.90	-2.91	1.83
Employment intensity				
Full-time	*40.17*	*37.20*	†	†
Part-time	34.20*	38.10	0.87	2.00
Teaching discipline				
Business	43.10	42.40	-5.26	4.29
Education	35.64*	35.20*	-12.46	4.34
Engineering/computer science	*51.38*	*47.70*	†	†
Fine arts	36.55*	39.40	-8.24	4.39
Health sciences	33.17*	33.20*	-14.45	4.04
Human services	30.37*	32.20*	-15.41	4.89
Humanities	36.08*	37.90*	-9.79	3.76
Life sciences	35.99*	33.80*	-13.87	4.60
Natural/physical sciences and math	37.28*	36.30*	-11.35	4.10
Social sciences	35.51*	34.80*	-12.83	3.80
Vocational	47.82	48.70	1.07	5.29
Level of classroom instruction[6]				
Undergraduate only	36.24*	37.10*	-6.93	2.94
Both undergraduate and graduate	*49.10*	*44.00*	†	†
Graduate only	36.64*	35.00*	-9.01	3.45
Highest degree				
Doctor's	*41.25*	*38.60*	†	†
First-professional	34.23	35.10	-3.49	3.56
Master's	35.54*	37.70	-0.91	2.29
Bachelor's	34.40	35.90	-2.74	3.68
Less than bachelor's	31.99	33.50	-5.16	5.88
Internet access				
Both at home and at work	*43.22*	*41.30*	†	†
At work only	33.82*	33.50*	-7.75	2.02
At home only	26.43*	32.10*	-9.18	2.92
Neither home nor work	27.45*	32.90*	-8.39	3.53

See footnotes at end of table.

Table C18.—Percentage of instructional faculty and staff at degree-granting institutions who used Web sites for their classes, by whether they taught non-face-to-face classes and other factors, and the adjusted percentage after controlling for covariation of the variables listed in the table: Fall 1998—Continued

Variable[1]	Unadjusted percentage[2]	Adjusted percentage[3]	Least squares coefficient[4]	Standard error[5]
Institution's computing resources[7]				
Poor	*16.31*	*19.40*	†	†
Fair	33.91*	33.30*	13.95	4.00
Good	40.63*	38.80*	19.45	3.81
Excellent	45.08*	42.30*	22.95	3.94
Institution type				
Public doctoral	41.61*	36.60	0.87	3.39
Private not-for-profit doctoral	47.78*	46.80*	11.02	3.80
Public comprehensive	41.05	41.60	5.86	3.08
Private not-for-profit comprehensive	31.78	32.20	-3.54	3.64
Private not-for-profit liberal arts	34.83	37.70	1.94	3.68
Public 2-year	*33.76*	*35.70*	†	†
Other[8]	30.54	34.10	-1.66	3.97
Total FTE enrollment				
1,500 or less	31.43*	34.60*	-10.73	4.53
1,501-6,000	35.40*	37.00*	-8.39	3.95
6,001-12,000	35.96*	34.80*	-10.58	3.88
12,001-24,000	42.57*	40.10	-5.21	3.46
More than 24,000	*49.29*	*45.40*	†	†
Primary medium non-face-to-face				
Yes	49.25*	47.80*	11.25	2.98
No	*36.61*	*36.60*	†	†

*$p \leq .05$.

†Not applicable for the reference group.

[1]The italicized group in each category is the reference group being compared.

[2]The estimates are from the NSOPF:99 Data Analysis System.

[3]The values are adjusted for differences associated with other variables in the table (see appendix B).

[4]Least squares coefficient from multiple regression, multiplied by 100 to reflect percentage (see appendix B).

[5]Standard error of least squares coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix B).

[6]Based on reports of the primary level of students in up to five for-credit classes.

[7]Based on average of respondent's ratings of the institution's personal computers and local networks, centralized (mainframe) computer facilities, Internet connections, and technical support for computer-related activities as poor, fair, good, or excellent.

[8]Includes public liberal arts, private not-for-profit 2-year, and other specialized institutions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1998–99 National Study of Postsecondary Faculty (NSOPF:99), Data Analysis System.

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